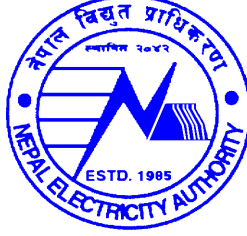


# NEPAL ELECTRICITY AUTHORITY

(An Undertaking of Government of Nepal)  
Project Management Directorate

KOHALPUR-NEPALGUNJ 132 KV TRANSMISSION LINE PROJECT



*(A Component of Electricity Grid Modernization Project-Additional Financing)*

## BIDDING DOCUMENT FOR

### Procurement of Plant for

Design, Supply, Installation, Testing and Commissioning of Transmission Line from Kohalpur to Nepalgunj (Janaki Rural Municipality) and Associated 132/33/11 kV Air Insulated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

Single-Stage, Two-Envelope  
Bidding Procedure

Issued on: 10 August, 2022  
Invitation for Bids No.: PMD/EGMPAF/KNTLP-079/80 – 01  
OCB No.: PMD/EGMPAF/KNTLP-079/80 – 01  
Employer: Nepal Electricity Authority  
Country: Nepal

VOLUME – III OF III  
August 2022

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Kohalpur-Nepalgunj 132 kV Transmission Line Project  
Project Management Directorate  
NEA Project Management Directorate  
Matatirtha, Kathmandu, Nepal  
Telephone: +977-9851155752

## Table of Contents

### 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.



*Ranjana*

# Letter of Price Bid

**- Note -**

The Bidder must accomplish the Letter of Price Bid on its letterhead clearly showing the Bidder's complete name and address.

Date: .....

OCB No.: .....

Invitation for Bid No.: .....

To: [insert complete name of the Employer]

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We acknowledge that we have read and understand ADB's Anticorruption Policy (1998) and Integrity Principles and Guidelines (2015), both as amended from time to time.
- (c) We offer to design, manufacture, test, deliver, install, pre-commission, and commission in conformity with the Bidding Document the following Plant and Services: [insert narrative]
- (d) The total price of our Bid, excluding any discounts offered in item (d) below is the sum of

[amount of foreign currency in words], [amount in figures], and [amount of local currency in words],  
[amount in figures]

The total bid price from the Grand Summary (Schedule No. 5) should be entered by the Bidder inside this box. Absence of the total bid price in the Letter of Price Bid may result in the rejection of the bid.

- (e) The discounts offered and the methodology for their application are as follows: [insert discounts and methodology for their application if any]
- (f) Our Bid shall be valid for a period of [insert bid validity period as specified in ITB 20.1 of the BDS] days starts from the date fixed for the submission deadline in accordance with ITB 24.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (g) If our Bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document.
- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award through the issuance of Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.



*Handwritten signature*

- (i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (j) At any time following submission of our Bid, we shall permit, and shall cause our Joint Venture partners, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the contract to permit ADB or its representative to inspect our sites, assets, accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB. We understand that failure of this obligation may constitute obstructive practice that may result in debarment and/or contract termination.
- (k) Regardless of whether the contract will be awarded to us, we shall preserve all accounts, records and other documents related to bid submission for at least 3 years from the date of submission of the bid or the period prescribed in applicable law, whichever is longer.
- (l) If we are awarded the contract, we shall preserve all accounts, records and other documents related to the procurement and execution of the contract for at least 5 years after the completing the works contemplated in the relevant contracts or the period prescribed in applicable law, whichever is longer.
- (m) We confirm and stand by our commitments and other declarations made in connection with the submission of our Letter of Technical Bid.
- (n) We certify on behalf of the Bidder, that the information provided in the bid has been fully reviewed, given in good faith, and to the best of our knowledge is true and complete. We understand that it is our obligation to inform the Employer of any changes to the information as and when it becomes known to us. We understand that any misrepresentation that knowingly or recklessly misleads, or attempts to mislead may lead to the automatic rejection of the Bid or cancellation of the contract, if awarded; and may result in remedial actions, in accordance with ADB's Anticorruption Policy (1998, as amended to date) and Integrity Principles and Guidelines (2015, as amended from time to time).

Name .....

In the capacity of .....

Signed .....

Duly authorized to sign the Bid for and on behalf of .....

Date .....



*Handwritten signature*



*Manoj*

# TRANSMISSION LINE

## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 1A: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, FC		REMARKS
		Unit	Quantity	Unit Rate	Amount	
		(3)	(5)	(6)	(6)=(3)*(4)x(5)	
(1)	(2)					
1	Design, Fabrication & supply of following types of towers & tower extension parts complete with stubs setting template, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices( 132 kV LINE)					
1.1	<b>Tower Type QA(Design of (a),(b) and (c) to be provided by Employer)</b>					
a	Stubs	No.	76			
b	Basic Body	No.	19			
c	QA +/- 0M Body Extension	No.	16			
d	QA +3M Body Extension	No.	3			
1.2	<b>Tower Type QB</b>					
a	Stub-	No.	32			
b	Basic Body	No.	8			
c	QB +/- 0M Body Extension	No.	6			
d	QB +3M Body Extension	No.	1			
e	QB +6M Body Extension	No.	1			
1.3	<b>Tower Type QC</b>					
a	Stub	No.	20			
b	Basic Body	No.	5			
c	QC +/- 0M Body Extension	No.	4			
d	QC + 3M Body Extension	No.	1			
1.4	<b>Tower Type QD(Design of (a),(b) and (c) to be provided by Employer)</b>					
a	Stub	No.	20			
b	Basic Body	No.	5			
c	QD +/- 0M Body Extension	No.	3			
d	QD +3M Body Extension	No.	1			
e	QD +9M Body Extension	No.	1			
1.5	<b>Tower Type DD (Design of (a),(b) and (c) to be provided by Employer)</b>					
a	Stub	No.	8			
b	Basic Body	No.	2			
c	DD +6M Body Extension	No.	2			

## Schedule of Rates and Prices

<b>2</b>	<b>Supply of Tower Accessories &amp; Earthing</b>				
<b>2.1</b>	<b>Tower Accessories</b>				
a	Danger Plate	No.	36		
b	Number Plate	No.	36		
c	Anti Climbing Device	Sets	36		
d	Phase Plate	Sets	108		
e	Circuit Plate	Sets	144		
f	Bird Guards	Sets	432		
g	Aviation signal	Sets	10		
<b>2.2</b>	<b>Supply of Tower Earthing Material</b>				
a	Pipe Type (Set of 4)	sets	36		
b	Counterpoise Type				
	i) Counterpoise Type - 25 m	sets	12		
	ii) Counterpoise Type - 50 m	sets	10		
	iii) Counterpoise Type - 100 m	sets	14		
<b>3</b>	<b>Supply of Line Materials</b>				
<b>3.1</b>	<b>Conductor and Groundwire (10 km)</b>				
a	ACSR conductor, code name "BEAR" with armour rod, mid span compression joints, repair sleeves etc to complete the job.	km	126.0		
b	Steel ground wire with optical fiber (48 core-fiber) including intermediate splice boxes and necessary terminal splice boxes.	km	10.5		
<b>3.2</b>	<b>Insulator strings with insulators, attachment assemblies and arcing horns all complete for ACSR "BEAR" conductor and attachment assemblies all complete for OPGW</b>				
a	Single suspension with 1 composite long rod insulator complete for "BEAR" conductor	Set	204		
b	Double suspension with 2x1 composite long rod insulator complete for "BEAR" conductor	Set	24		
c	Single tension with 1 composite long rod insulator complete for "BEAR" conductor	Set	288		
d	Double tension with 2x1 composite long rod insulator complete for "BEAR" conductor	Set	120		
e	Jumper set with pilot insulators, armour rod complete with all accessories for one tower	Set	13		
f	OPGW suspension preformed assembly complete for one tower	Set	19		
g	OPGW tension preformed assembly complete for one tower (one set/tower)	Set	34		
<b>3.3</b>	<b>Preformed fittings for OPGW</b>				
a	Optical approach cable for New Nepalgunj Substation.	Km	0.5		
b	Optical Distribution Frames and other accessories required for connection with Multiplexer of New Nepalgunj Substation.	Lot	1		
<b>3.4</b>	<b>Vibration Dampers</b>				
a	Stockbridge Vibration damper for BEAR Conductor with preformed armour rods	set	1270		
b	Stockbridge Vibration damper for OPGW overhead ground wire with preformed armour rods	set	210		



## Schedule of Rates and Prices

<b>4</b>	<b>Spare Parts</b>					
<b>4.1</b>	<b>Galvanized steel tower with required extension including Stubs</b>					
a	Tower type QA+9	nos.	1			
b	Tower type QB+9	nos.	1			
c	Tower type QC+9	nos.	1			
d	Tower type QD+9	nos.	1			
<b>4.2</b>	<b>Insulator strings with insulators, attachment assemblies and arcing horns all complete for ACSR "BEAR" conductor and attachment assemblies all complete for OPGW</b>					
a	Single suspension with 1 composite long rod insulator complete for "BEAR" conductor	sets	24			
b	Double suspension with 2x1 composite long rod insulator complete for "BEAR" conductor	sets	24			
c	Single tension with 1 composite long rod insulator complete for "BEAR" conductor	sets	12			
d	Double tension with 2x1 composite long rod insulator complete for "BEAR" conductor	sets	12			
e	Jumper set with pilot insulators, armour rod & suitable counter weight complete with all accessories for one tower	sets				
f	OPGW suspension preformed assembly complete for one tower	sets	2			
g	OPGW tension preformed assembly complete for one tower (one set/tower)	sets	1			
<b>4.3</b>	<b>Conductor and accessories</b>					
a	Mid span compression sleeves for ACSR "BEAR" conductor	nos.	35			
b	Repair sleeve for ACSR "BEAR" conductor	nos.	35			
c	Stockbridge Vibration Damper for ACSR "BEAR"	nos.	40			
<b>4.4</b>	<b>Overhead OPGW and accessories</b>					
a	Mid span compression sleeve for OPGW	nos.	6			
b	Repair sleeve for OPGW	nos.	6			
c	Optical fiber ground wire	km	1			
d	Optical approach cable	km	1			
e	Vibration Damper for OPGW	set	12			

Schedule of Rates and Prices

5	Tools And Equipment					
5.1	Flat wrench for different size of bolts	sets	2			
5.2	Pipe wrench for common bolts	sets	2			
5.3	Come along clamp for BEAR conductor	sets	4			
5.4	Come along clamp for OPGW	nos.	4			
5.5	Torque Wrench for different size of bolts	sets	4			
5.6	Safety belt	sets	12			
5.7	Portable Hydraulically operated Crimping tools with 2 sets of dies each for Conductor "BEAR", "CARDINAL", "MOOSE", & OPGW	sets	1			
5.8	Safety helmet	sets	12			
5.9	Double sheeve pulley block 5 MT capacity complete with all accessories	sets	4			
5.10	Four sheeve pulley block 10 MT capacity complete with all accessories	sets	2			
5.11	Sagging Winch Machine 10 MT capacity	sets	1			
5.12	Earth discharge rod	set	4			
5.13	132 kV Line Tester	set	1			
5.14	Earth resistance tester, battery operated with measuring range 0-1000 ohms minimum, complete with accessories	set	1			
5.15	Earth Resistivity Tester	Set	1			
5.16	Steel ropes (Pilot wire) 35 sq. mm	m	500			
5.17	Rubber covered rollers, pullies (2,3 keys)	sets	4			
5.18	Line operator's leather gloves	pairs	4			
5.19	Insulation tester (10000 V) suitable for outdoor line testing purpose	No.	1			
	<b>Total of Schedule No.1A to Grand Summary)</b>					
Note: The unit rate in this sheet does not include Local Transportation, Insurance and other Incidental services (including port clearance etc.).						

Name and Address of the Bidder

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Signature and Seal of the Bidder



## Schedule of Rates and Prices

## NEPAL ELECTRICITY AUTHORITY

Project Management Directorate

## Kohalpur-Nepalgunj 132 kV Transmission Line Project

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule 3A: Design Services**

Item No.	Item Description	Estimated		Unit Price		Total Price		Remarks
		Unit	Quantity	Local Currency Portion (LC)	Foreign Currency Portion (FC)	Local Currency Portion (LC)	Foreign Currency Portion (FC)	
1	2	3	4	5	6	7 = 4x5	8 = 4x6	
1	<b>Design of Tower</b>							
a	Tower Type QB with extension +9m	lot	1					
b	Tower Type QC with extension +9m	lot	1					
c	Extension of 9m for Tower Type QA	lot	1					
d	Extension of 9m for Tower Type QD	lot	1					
	<b>Total design cost</b>							
<b>Total of Schedule -3A</b>								

NOTE: Design Services and Prototype Testing costs of all other items shall be include in Schedule-1 or in Schedule-2 by the bidder.

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

## Schedule of Rates and Prices

## NEPAL ELECTRICITY AUTHORITY

Project Management Directorate

## Kohalpur-Nepalgunj 132 kV Transmission Line Project

**Electricity Grid Modernization Project - Additional Financing**

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 4A(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
<b>1</b>	<b>Survey</b>					
a	Check survey and review of profile including L/R profile in undulation, tower spotting, staking of tower locations and survey on tower location where required.	Km.	10.00			
b	Detail Survey and associated works at few locations.	Km.	2.00			
c	Preparation of Land Parcel data for tower pad and ROW lands	Set	1.00			
<b>2</b>	<b>Soil Investigation</b>					
a	All kinds of Soils except fissured rock & hard rock	Loc.	15			
b	Fissured Rock (Both dry and wet)	Loc.	10			
c	Hard Rock	Loc.	1			
d	River Crossing	Loc.	2			
e	Furnishing Bore Log Data	Loc.	8			
f	Measurement of ground resistance	Loc.	36			
<b>3</b>	<b>Benching</b>					
a	Normal Soil	Cum.	1500			
b	Fissured Rock	Cum.	500			
c	Hard Rock	Cum.	50			
<b>4</b>	<b>Erection of towers &amp; its body extensions (Complete) including bolts &amp; nuts, tack welding and supply and application of enamel &amp; zinc rich paint</b>					
<b>4.1</b>	<b>Tower Type QA(Design of (a),(b) and (c) to be provided by Employer)</b>					
a	Stubs	No.	76			
b	Basic Body	No.	19			
d	QA +/- 0M Body Extension	No.	16			
e	QA +3M Body Extension	No.	3			
<b>4.2</b>	<b>Tower Type QB</b>					
a	Stub	No.	32			
b	Basic Body	No.	8			
d	QB +/- 0M Body Extension	No.	6			
e	QB +3M Body Extension	No.	1			
f	QB +6M Body Extension	No.	1			

## Schedule of Rates and Prices

<b>4.3</b>	<b>Tower Type QC</b>				
a	Stub	No.	20		
b	Basic Body	No.	5		
d	QC +/- 0M Body Extension	No.	4		
e	QC + 3M Body Extension	No.	1		
<b>4.4</b>	<b>Tower Type QD(Design of (a),(b) and (c) to be provided by Employer)</b>				
a	Stub	No.	20		
b	Basic Body	No.	5		
d	QD +/- 0M Body Extension	No.	3		
e	QD +3M Body Extension	No.	1		
f	QD +9M Body Extension	No.	1		
<b>4.4</b>	<b>Tower Type DD</b>				
a	Stub	No.	8		
b	Basic Body	No.	2		
e	DD +6M Body Extension	No.	2		
<b>5</b>	<b>Work associated with installation of tower foundations with excavation and backfilling</b>				
<b>5.1</b>	<b>Tower Type QA (for all type of body extensions)</b>				
a	Dry Soil	No.	3		
b	Wet Soil	No.	8		
c	Fully Submerged Soil	No.	10		
d	Dry Fissured Rock	No.	1		
e	Wet Fissured Rock	No.	1		
f	Submerged Fissured Rock	No.	1		
g	Hard Rock	No.	1		
<b>5.2</b>	<b>Tower Type QB (for all type of body and leg extensions)</b>				
a	Dry Soil	No.	4		
b	Wet Soil	No.	2		
c	Fully Submerged Soil	No.	2		
d	Dry Fissured Rock	No.	1		
e	Wet Fissured Rock	No.	1		
f	Submerged Fissured Rock	No.	1		
g	Hard Rock	No.	1		
<b>5.3</b>	<b>Tower Type QC (for all type of body and leg extensions)</b>				
a	Dry Soil	No.	1		
b	Wet Soil	No.	2		
c	Fully Submerged Soil	No.	2		
d	Dry Fissured Rock	No.	1		
e	Wet Fissured Rock	No.	1		
f	Submerged Fissured Rock	No.	1		
g	Hard Rock	No.	1		

## Schedule of Rates and Prices

<b>5.4</b>	<b>Tower Type QD (for all type of body and leg extensions)</b>					
a	Dry Soil	No.	1			
b	Wet Soil	No.	1			
c	Fully Submerged Soil	No.	2			
d	Dry Fissured Rock	No.	1			
e	Wet Fissured Rock	No.	1			
f	Submerged Fissured Rock	No.	1			
g	Hard Rock		1			
<b>5.4</b>	<b>Tower Type DD (for all type of body and leg extensions)</b>					
a	Dry Soil	No.				
b	Wet Soil	No.	2			
c	Fully Submerged Soil	No.				
d	Dry Fissured Rock	No.				
e	Wet Fissured Rock	No.				
f	Submerged Fissured Rock	No.				
g	Hard Rock	No.				
<b>6</b>	<b>Installation of Tower Accessories &amp; Earthing</b>					
<b>6.1</b>	<b>Tower Accessories</b>					
a	Danger Plate	No.	36			
b	Number Plate	No.	36			
c	Anti Climbing Device	Sets	36			
d	Phase Plate	Sets	108			
e	Circuit Plate	Sets	144			
f	Bird Guards	Sets	432			
g	Aviation signal	Sets	10			
<b>6.2</b>	<b>Installation of Tower Earthing Material</b>					
a	Pipe Type (Set of 4)	sets	36			
	Counterpoise Type					
b	i) Counterpoise Type - 25 m	sets	12			
	ii) Counterpoise Type - 50 m	sets	10			
	iii) Counterpoise Type - 100 m	sets	14			
<b>7</b>	<b>Installation of Line Materials</b>					
<b>7.1</b>	<b>Stringing of Conductor and Groundwire including jumpering</b>					
a	Stringing of 10 km, 132 kV Double circuit transmission line ACSR conductor (Loop In Loop Out) in 4-ckt tower, code name "BEAR" with armour rod, mid span compression joints, repair sleeves etc to complete the job	km	10.0			
b	Stringing of 10 km, steel ground wire with optical fiber (48-fiber) including intermediate splice boxes and necessary terminal splice boxes, etc.	km	10.0			

## Schedule of Rates and Prices

<b>7.2</b>	<b>Insulator strings with insulators, attachment assemblies and arcing horns all complete for ACSR "Bear" conductor and attachment assemblies all complete for OPGW</b>					
a	Single suspension with 1 composite long rod insulator complete for "BEAR" conductor	Set	204			
b	Double suspension with 2x1 composite long rod insulator complete for "BEAR" conductor	Set	24			
c	Single tension with 1 composite long rod insulator complete for "BEAR" conductor	Set	288			
d	Double tension with 2x1 composite long rod insulator complete for "BEAR" conductor	Set	120			
e	Jumper set with pilot insulators, armour rod complete with all accessories for one tower	Set	13			
f	OPGW suspension preformed assembly complete for one tower	Set	19			
g	OPGW tension preformed assembly complete for one tower (one set/tower)	Set	34			
<b>7.3</b>	<b>Installation of Preformed fittings for OPGW</b>					
a	Optical approach cable for New Nepalgunj Substation.	Km	0.5			
b	Optical Distribution Frames and other accessories required for connection with Multiplexer of New Nepalgunj Substation.	Lot	1			
<b>7.4</b>	<b>Installation of Vibration Dampers</b>					
a	Stockbridge Vibration damper for BEAR Conductor with preformed armour rods	set	1270			
b	Stockbridge Vibration damper for OPGW overhead ground wire with preformed armour rods	set	210			
<b>8</b>	<b>Protection of tower footing</b>					
a	Random rubble stone masonry including excavation (1:4 cement: sand)	CUM	500			
b	Stone bound in galvanizing wire netting including excavation (Gabion box protection)	CUM	500			
c	Back filling and leveling of volumes enclosed by revetment	CUM	200			
d	M20 Conc. Nominal Mix 1:1.5:3 for protection work.	CUM	200			
e	Reinforcement Bars	tons	1			
	<b>Total of Schedule No. 4A(a) to Grand Summary)</b>					
Note: The unit rate in this sheet does not include Local Transportation, Insurance and other Incidental services (including port clearance etc.).						



## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

**PMD/EGMPAF/KNTLP-079/80-01: Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)**

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

**(b): Training Charges for training to be imparted to Employer's Personnel by Bidder's Instructor in 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		Remarks
						Charges (FC)	Total Training Charges (FC)	
	Training Charges for the trainings to be imparted abroad to Employers personnels							
		Not Applicable						
	<b>Total for Training Charges</b>							
<b>Total of Schedule- 4A(b)</b>								

**REMARKS:**

1. Training at Manufacturer's works: The Bidder/Contractor shall include in the training charges payment of per Diem allowance to Employer's Personnel (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.

## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01: Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 4A : 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		Remarks	
					Unit rate (LC)	Total Training Charges (FC)		
1	2	3	4	5	6	7 = 4x 6		
		Not Applicable						
<b>Total for Training Charges</b>						-		
<b>Total of Schedule- 4 A(c)</b>							-	

**REMARKS:**

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

## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01: Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 4A : Installation and Other Services (Common for all)****(d): Maintenance Charges**

SI No	Description	Unit	Qty.	Total Maintenance Charges			Remarks
				Currency	Unit Rate (LC)	Total Maintenance Charges (LC)	
	1	2	3	4		5	
	<b>Total Maintenance Charges</b>						
	<u>Total of Schedule- 4A (d)</u>					-	

## Schedule of Rates and Prices

## NEPAL ELECTRICITY AUTHORITY

Project Management Directorate

## Kohalpur-Nepalgunj 132 kV Transmission Line Project

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 4A : Installation and Other Services (Common for all)****(e) : Prototype Testing of Tower**

Item No.	Item Description	Estimated		Unit Price		Total Price		Remarks
		Unit	Quantity	Local Currency Portion (LC)	Foreign Currency Portion (FC)	Local Currency Portion (LC)	Foreign Currency Portion (FC)	
1	2	3	4	5	6	7 = 4x5	8 = 4x6	
1	<b>Proto Type Testing of Towers</b>							
a	Tower Type QB with extension +9m	No.	1					
b	Tower Type QC with extension +9m	No.	1					
	<b>Total Testing cost</b>							
<b>Total of Schedule -4A (e)</b>								

NOTE: Design Services and Prototype Testing costs of all other items shall be include in Schedule-1 or in Schedule-2 by the bidder.

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

## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 5A: Grand Summary**

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



# SUBSTATION

## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**

Project Management Directorate

**Kohalpur-Nepalgunj 132 kV Transmission Line Project****Electricity Grid Modernization Project - Additional Financing**

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
<b>Part I: 132/33/11 kV New Nepalgunj Substation (AIS)</b>						
1	Materials for Electrical, SAS and Communication Works					
	<b>PART - A : EMPLOYER ASSESSED QUANTITIES</b>					
1.1	<b>Transformers</b>					
1.1.1	<b>Power Transformer</b>					
1.1.1.1	132/33 kV, Three phase, 51/63 MVA, ONAN/ONAF Power Transformer complete with On Load Tap Changer (OLTC) & RTCC facility, Tank Mounted LA at LV side and Bushing CT on both sides, Oil filled, star/star connected complete with all accessories as specified in technical Specification.	Set	2			
1.1.1.2	33/11 kV, Three phase, 20/24 MVA, ONAN/ONAF Power Transformer complete with On Load Tap Changer (OLTC) & RTCC facility, Tank Mounted LA at LV side and Bushing CT on both sides, Oil filled, delta/star connected complete with all accessories as specified in technical Specification.	Set	2			
1.1.2	<b>Station Supply Transformer</b>					
1.1.2	200 kVA, 33/0.4 kV, Three phase, ONAN, delta/star connected, Off load Tap Changer, Distribution Transformer with all other accessories as specified in technical Specification.	Set	2			
1.2	<b>Circuit Breakers and Switchgears with support structures</b>					



## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		Unit	Quantity	FC		
				Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.2.1	145 kV, 1600 A, 3 phase, SF6 Circuit Breaker (individual pole operation type) complete with all accessories and support structures as per specification for incoming/outgoing 132 kV lines	Set	4			
1.2.2	145 kV, 1600 A, 3 phase, SF6 Circuit Breaker (three pole operation type) complete with all accessories and support structures as per specification for 2 nos. of 132/33 kV Power Transformers	Set	2			
1.2.3	145 kV, 2000 A, 3 phase, SF6 Circuit Breaker (three pole operation type) complete with all accessories and support structures as per specification for 132 kV Bus Coupler	Set	1			
1.2.4	36 kV, 1250 A, 3 phase, Vacuum Circuit Breaker (three pole operation type) complete with all accessories and support structures as per specification for 132/33 kV transformer	Set	2			
1.2.5	36 kV, 800 A, 3 phase, Vacuum Circuit Breaker (three pole operation type) complete with all accessories and support structures as per specification for 7 outgoing 33 kV feeder and 2 Power Transformer.	Set	8			
<b>1.3</b>	<b>Disconnecter Switches/Isolators</b>					
1.3.1	145 kV, 2000 A, 3 phase, Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for Bus Coupler	Set	2			
1.3.2	145 kV, 1600 A, 3 phase Double Break Disconnecter Switch with one Grounding Switch complete with all accessories as per specification for 132 kV incoming/outgoing Lines	Set	4			
1.3.3	145 kV, 1600 A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification	Set	16			
1.3.4	145 kV, 1600 A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for using as By-pass isolator for 132 kV Lines	Set	4			
1.3.5	36 kV, 1600 A, 3 phase Bus-Sectionalizer Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.3.6	36 kV, 1250A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for 33 kV incoming lines	Set	2			
1.3.7	36 kV, 800 A, 3 phase Double Break Disconnecter Switch with one Grounding Switch complete with all accessories as per specification for 33 kV outgoing lines	Set	6			
1.3.8	36 kV, 800 A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for 7 nos. of 33 kV lines and 2 nos. of transformers	Set	8			
1.3.9	36 kV, 400 A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for 2 nos. of station transformers	Set	2			
<b>1.4</b>	<b>Instrument Transformers</b>					
1.4.1	145 kV, 50 VA, 132/V3 /110/V3/ 110/V3 kV, Class 0.2/3P, Capacitor Voltage Transformer (1-phase) complete with all accessories as per specification	Nos.	18			
1.4.2	145 kV, 30 VA, 5 core, Class 0.2, 1200-800-600/1 A, Current Transformer (1-phase) complete with all accessories as per specification for 132 kV Line bays	Nos.	12			
1.4.3	145 kV, 30 VA, 5 core, Class 0.2, 1600-1000/1 A, Current Transformer (1-phase) complete with all accessories as per specification for 132 kV Bus coupler	Nos.	3			
1.4.4	145 kV, 30 VA, 5 core, Class 0.2, 900-600-300/1 A, Current Transformer (1-phase) complete with all accessories as per specification for 132/33 kV Power Transformers	Nos.	6			
1.4.5	36 kV, 30 VA, 33/V3/ 110/V3/ 110/V3 kV, Class 0.2/3P, Voltage Transformer (1-phase) complete with all accessories as per specification(Line PT not required for 33kV)	Nos.	12			
1.4.6	36 kV, 30 VA, 3 core, Class 0.2, Multi ratio, Current Transformer (1-phase) complete with all accessories as per specification	Nos.	30			
<b>1.5</b>	<b>Lightening Arrestor</b>					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		Unit	Quantity	FC		
				Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.5.1	120 kV, 10 kA Lightning Arrestor (1-phase) including Discharge Counter complete with all accessories as per specification	Nos.	18			
1.5.2	30 kV, 10 kA Lightning Arrestor (1-phase) complete with all accessories as per specification	Nos.	30			
1.5.3	9 kV, 10 kA Lightning Arrestor complete (1-phase) with all accessories as per specification	Nos.	18			
<b>1.6</b>	<b>Control and Relay Panel with Automation</b>					
1.6.1	132 kV Transmission Line Control and Relay Panel complete with all accessories as per specification for incoming/outgoing 132 kV Line	Set	4			
1.6.2	132/33 kV Transformer Control and Relay Panel complete set for HV and LV side with all accessories as per specification	Set	2			
1.6.3	132 kV bus coupler cum bus bar protection control and relay panel complete with all accessories as per specification	Set	1			
1.6.4	33/11 kV Transformer Control and Relay Panel complete set for HV and LV side with all accessories as per specification	Set	2			
1.6.5	33 kV Sub-transmission Line Control and Relay Panel complete with all accessories as per specification for outgoing 33 kV Line	Set	6			
1.6.6	Time Synchronisation Equipment as per specification pertaining to C & R System	No.	1			
<b>1.7</b>	<b>12 KV, 25kA, 3 sec, 3-phase Indoor Switchgear Panel</b>					
1.7.1	12 kV Transformer Incomer Module (2000A) with VCB, CRP, CT and all accessories as per technical specification	Set	2			
1.7.2	12 kV Line Outgoing Module (800A) with VCB, CRP, CT and all accessories as per technical specification	Set	6			
1.7.3	12 kV Bus Coupler Module (2500A) with all accessories as per technical specification	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.7.4	12 kV PT module with all accessories as per technical specification	Set	2			
<b>1.8</b>	<b>Substation Automation System (SAS)</b>					
1.8.1	Complete Substation Automation System (SAS) including hardware and software for the substation & remote control stations alongwith associated equipments for the followings as per Technical Specification.					
i.	132 kV System	Bay Nos.	7			
ii.	33 kV System	Bay Nos.	10			
iii.	11 kV System (Indoor Switchgear)	Bay Nos.	8			
iv.	BCU for controlling & monitoring of auxilliary system	Set	1			
<b>1.9</b>	<b>Teleprotection &amp; Communication Equipments</b>					
1.9.1	Digital Protection Coupler with sub Rack as per technical specification	Nos.	8			
1.9.2	SDH Equipment with MPLS - TP facility (STM -4 upto 4 MSP Protected directions as well as 10 G 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 (Additional Sub Rack if required to accomodate all facilities including SDH and MPLS - TP mentioned above) , patch cord, DDF etc. fully equiped excluding (ii) & (iii) below	Nos.	1			
(ii)	Optical Interface Cards/SFP for					
(a)	L4.2 SFP ( For integration with SDH Equipment at Kohalpur Substation and Bhurigaun Substation)	Nos.	8			
(b)	10 G SFP ( For integration with FOX615 equipment at Syuchatar Substation)	Nos.	4			
(iii)	Tributary cards					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		Unit	Quantity	FC		
				Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
(a)	E1 Interface card (Min. 8 Interfaces per card)	Set	2			
(b)	Fast -Ethernet Interface 10/100 Mbps Base T with Layer-2 switching (Min. 8 Interfaces per card)	Nos.	3			
1.9.3	Equipment Cabinet	No.	1			
1.9.4	VOIP telephone instrument with one common POE+ switch (min. 8 port)	Nos.	2			
<b>1.10</b>	<b>Station Supply, LV Switchgear (As per Technical specification)</b>					
1.10.1	400V AC Main Switch Control Panel including MCB, Cable and accessories for the specified scope of the work.	Set	1			
1.10.2	400V AC Distribution Board (ACDB ) including Cable and accessories for the specified scope of the work.	Set	2			
1.10.3	400V AC Main Lighting Distribution Board (MLDB) including Cable and accessories for the specified scope of the work.	Set	1			
1.10.4	400V AC Emergency Distribution Board including Cable and accessories for the specified scope of the work.	Set	1			
1.10.5	110 V DC Distribution Board including cable and accessories to complete the specified scope of work.	Set	1			
1.10.6	48 V DC Distribution Board including cable and accessories to complete the specified scope of work.	Set	1			
<b>1.11</b>	<b>Power Cables with clamps, glands, lugs and straight joints etc.</b>					
1.11.1	12 kV, 400 sq. mm, Single core, XLPE insulated Copper conductor armoured Power Cable including termination joints for both ends with other required accessories complete as per Drawing and specification for Two cables per phase from LV sides of both 33/11 kV, 3 phase, Power Transformers upto 2 nos. of Indoor 11 kV Switchgear Module Panels in the switchgear room. (2*2*3=12 nos. of single core power cable)	m	1000			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.11.2	12 kV, 240 sq.mm, 3 core, XLPE insulated Copper conductor armoured Power Cable including cable termination joints at both ends with other required accessories complete as per Drawing and specification for 6 nos. of Outgoing 11 kV Distribution Feeders .	m	1000			
<b>1.12</b>	<b>Battery / Battery Charger</b>					
1.12.1	Dual Mode Float Cum Boost Battery charger for 110 V battery complete with all accessories to complete the specified scope of work.	Set	2			
1.12.2	110 V, 600 AH maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work.	Set	2			
1.12.3	Dual Mode Float Cum Boost Battery charger for 48 V battery complete with all accessories to complete the specified scope of work.	Set	1			
1.12.4	48 V, 300 AH maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work.	Set	1			
<b>1.13</b>	<b>Fire Detection &amp; Alarm System</b>					
1.13.1	50 litre foam type, Portable/Trolley/Wheel mounted fire extinguishers	Nos.	4			
1.13.2	4.5 kg CO <sub>2</sub> type, Fire Extinguisher	Nos.	10			
1.13.3	22.5 kg Dry Chemical Power (DCP) type, Trolley/Wheel mounted fire extinguishers	Nos.	3			
1.13.4	Smoke detection system in Control Room cum administrative Building	Set	1			
1.13.5	Fire detection and Alarm System in Control Room cum administrative Building	Set	1			
<b>1.14</b>	<b>Monitoring and Analyzing Equipment</b>					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		Unit	Quantity	FC		
				Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.14.1	Online monitoring Equipment of fault gases, air components and moisture in transformer insulating fluids (Dissolved gas Analyzer) of 132/33 kV Power Transformer with Inside View (Analysis Software) as per specification	Set	2			
<b>1.15</b>	<b>Air Conditioning system as per technical specification</b>					
1.15.1	Ceiling cassette type split AC unit of 3 TR capacities including Ceiling cassette for 132 kV control room	Nos.	4			
1.15.2	High wall type split AC unit of 2 TR capacities for switchgear room	Nos.	2			
1.15.3	High wall type split AC unit of 1.5 TR capacities for Office room, communication room, battery room and Township (Staff Quarters) buildings	Nos.	10			
<b>1.16</b>	<b>Bus Post/Support Insulators including all other accessories required to complete the specified scope of work for</b>					
1.16.1	132 kV Bus	Nos.	78			
1.16.2	33 kV Bus	Nos.	42			
<b>1.17</b>	<b>Diesel Generator with control Panel</b>					
1.17.1	50 kVA Silent type Diesel Generator (400/230 V, 50 Hz) with control Panel & AMF panel as per technical specification for fire fighting system	Set	1			
	<b>Sub-total of Part - A of Electrical, SAS and Communication Works</b>					
	<b>PART - B : CONTRACTOR ASSESSED QUANTITIES</b>					
<b>1.18</b>	<b>Power &amp; Control cables with fitting accessories</b>					
1.18.1	1.1 kV grade PVC/XLPE insulated Power and lighting cable (Copper) for proper connection of electrical works in Control room building, Staff quarters, Security (Guard) room, Store building, Pump house, Fire fighting system, Switchyard lighting, Road & Street lighting and other necessary places and circuits to complete the specified scope of work as per Technical specification and approved drawing.	Lot	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		Unit	Quantity	FC		
				Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.18.2	1.1 kV grade PVC insulated Control cable (Copper) to complete the specified scope of works including that for communication and networking system works as per Technical specification and approved drawing.	Lot	1			
1.18.3	Cable glands, lugs & straight through joints for Power & Control cables	Lot	1			
<b>1.19</b>	<b>Visual Monitoring System</b>					
1.19.1	Visual Monitoring System for watch & ward as per technical specification and approved drawing	Lot	1			
<b>1.20</b>	<b>Fire Protection System as per technical Specification</b>					
1.20.1	Pumping arrangement for HVW system & hydrant system complete with all piping, valves, fittings etc. inside pump house.	Lot	1			
1.20.2	Hydrant system, complete U/G piping and accessories etc. outside the Pump House for all transformers and equipment.	Lot	1			
1.20.3	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for :					
1.20.3.1	63 MVA, 132/33 kV Three Phase Power Transformer and equipment	Sets	2			
1.20.3.2	24 MVA, 33/11 kV Three Phase Power Transformer and equipment	Sets	2			
<b>1.21</b>	<b>Earthing and lightning protection</b>					
1.21.1	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 as per technical Specification and approved drawing.	Lot	1			
1.21.2	Earthing system of substation with Copper conductors, copper clad steel Earth Rod with necessary connectors/connections, risers etc. complete in all respect as per technical Specification and approved drawing.	Lot	1			



## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.21.3	Equipment for lightning protection of substation including necessary connectors/connections, risers etc. complete in all respect ( but excluding LM structures for Lightning protection) as per technical Specification and approved drawing.	Lot	1			
<b>1.22</b>	<b>Erection Hardwares and Miscellaneous material as per technical Specification and approved drawing</b>					
1.22.1	145 kV Insulator Strings, Disc Insulators, necessary hardwares, Clamps, spacers, connectors for Transformer, Substation Works and connection between Line Tower, Take Off Gantry and Internal Gantry structure etc. all complete as per the specification to complete the specified scope of works for 7 bays.	Lot	1			
1.22.2	36 kV Insulator Strings, Disc Insulators, necessary hardwares, Clamps, spacers, connectors for Transformer, Substation Works and connection between Line Tower, Take Off Gantry and Internal Gantry structure etc. all complete as per the specification to complete the specified scope of works for 11 bays and 2 station transformers.	Lot	1			
1.22.3	132 kV Tubular Bus (Outer Dia 100 mm and thickness 10 mm capable of carrying 2500 A), expansion joint including all other Accessories required to complete 132 kV double bus-bar configuration as per the specified scope of work	Lot	1			
1.22.4	ACSR "CARDINAL" Conductors for 132kV switchyard and substation works with necessary hardwares and accessories to complete the specified scope of works for Line Tower to Take Off and Internal Gantry Structure (including stringing of conductor between tower to gantry for 132kV)	Lot	1			
1.22.5	33 kV Tubular Bus (Dia 75 mm, thickness 8 mm) including branch bus -bars for 33 kV and other accessories required to complete the specified scope of work	Lot	1			
1.22.6	ACSR "CARDINAL" conductors for 33 kV switchyard with necessary hardwares and accessories for substation works and for overhead connections to the 33 kV lines at the gantry as required to complete the specified scope of works	Lot	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		Unit	Quantity	FC		
				Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.22.7	36 kV Horn Gap Fuse along with support insulator (1-phase) and other accessories as required to complete the specified scope of work for primary connection of 33/0.4 kV station service Transformer.	Nos.	6			
<b>1.23</b>	<b>ILLUMINATION SYSTEM</b>					
1.23.1	Lighting system (Outdoor and Peripheral) for Switchyards, Substation area, Entrance & Internal Roads, outdoor area of Control Room, Township (Staff Quarters), Security room, store and fire fighting pump house buildings, Boundary wall periphery & along main approach roads (with support wherever necessary), occupancy sensor and Street lights etc. to complete the specified scope of works as per technical specification and approved drawing.	Lot	1			
1.23.2	Emergency DC lighting system with necessary accessories all complete for control room, switchyard and substation gate area as per technical specification	Set	15			
	<b>Sub-total of Part - B of Electrical, SAS and Communication works</b>					
	<b>Total of Electrical, SAS and Communication Works of AIS Substation</b>					
<b>2</b>	<b>CIVIL AND ARCHITECTURAL WORKS (Design and Supply)</b>					
	<b>PART - C : CONTRACTOR ASSESSED QUANTITIES</b>					
<b>2.1</b>	<b>STEEL STRUCTURES (Tower, Gantry structures &amp; Equipment support structures)</b>					
	Design, Fabrication, galvanising & supply of Lattice/Pipe Structure for towers, Lightning/Earth Mast, post, beams and equipments including peak plates/pack washers and guest paltes including foundation bolts (nuts, washers, MS plate welded at the bottom) as per approved drawings and technical specifications.					
2.1.1	Lattice structure including Foundation bolts	MT	105			
2.1.2	Pipe Structure including Foundation Bolts	MT	45			
2.1.3	Fastners for towers, beams and equipment support structures	MT	5			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
	<b>Total of Part - C of Civil and Architectural Works of New Nepalgunj Substation</b>					
<b>3</b>	<b>PART - D : Mandatory SPARE PARTS</b>					
<b>3.1</b>	<b>For 132/33 kV Power Transformer</b>					
3.1.1	132 kV and 33 kV Bushing (one of each type) with metal parts, gaskets and lifting tools	Set	1			
3.1.2	Local & Remote WTI and OTI with sensing device & contact (each type)	Set	1			
3.1.3	Oil Level Gauges	Set	1			
3.1.4	Insulating Oil (10% of total supply) to be handed over to NEA after commissioning for O&M requirement including tank separately	Lot	1			
3.1.5	Indicating Lamps (25% of used)	Lot	1			
3.1.6	All types of Fuses (25% of used)	Lot	1			
3.1.7	Complete set of Gaskets of each type	Set	1			
3.1.8	Complete set of Pressure Relief Device	Set	1			
3.1.9	All type of Auxiliary, Current, Voltage and Thermal Relays, Contactors and Timers for electrical control, protection and cooling circuit (one of each type)	Set	1			
3.1.10	OLTC Motor with Contactor	Set	1			
3.1.11	Complete set of Buchholz relay with contacts	Set	1			
3.1.12	Cooler Fan with motor	No.	1			
3.1.13	Remote tap position Indicator	No.	1			
<b>3.2</b>	<b>For 33/11 kV Power Transformer</b>					
3.2.1	33 kV and 11 kV Bushing (one of each type) with metal parts and gaskets and lifting tools	Set	1			
3.2.2	Local & Remote WTI and OTI with sensing device & contact (each type)	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
3.2.3	Oil Level Gauges	Set	1			
3.2.4	Indicating Lamps (25% of used)	Lot	1			
3.2.5	All types of Fuses (25% of used)	Lot	1			
3.2.6	Complete set of Gaskets of each type	Set	1			
3.2.7	Complete set of Pressure Relief Device	Set	1			
3.2.8	All type of Auxiliary, Current, Voltage and Thermal Relays, Contactors and Timers for electrical control, protection and cooling circuit(one of each type)	Set	1			
3.2.9	OLTC Motor with Contactor	Set	1			
3.2.10	Complete set of Buchholz relay with contacts	Set	1			
3.2.11	Cooler Fan with motor	No.	1			
<b>3.3</b>	<b>For 145kV SF6 Circuit Breaker</b>					
3.3.1	Complete set (one chamber) of interrupter	Sets	2			
3.3.2	Tripping Coils assembly with resistor as applicable	Nos.	6			
3.3.3	Closing Coils assembly with resistor as applicable	Nos.	6			
3.3.4	Pressure Switch, Relays, Contactors, push buttons, timers & MCBs etc (one no. of each type & rating)	Sets	2			
3.3.5	Motors for mechanism of each type	Nos.	1			
3.3.6	SF6 gas filling equipment, nozzle & adaptor complete with accessories	Set	1			
3.3.7	Rubber gaskets, 'O' rings and seals for SF6 gas (1 No. of each type)	Sets	2			
3.3.8	Gas in sealed non returnable bottles, net	kgs	50			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
<b>3.4</b>	<b>For 36kV Vaccum Circuit Breaker</b>					
3.4.1	Complete set (one chamber) of interrupter	Sets	1			
3.4.2	Tripping Coils assembly with resistor as applicable	Nos.	3			
3.4.3	Closing Coils assembly with resistor as applicable	Nos.	3			
3.4.4	Relays and Contactors (One of each type)	Sets	2			
3.4.5	Motors for Mechanism of each type	Set	1			
3.4.6	Complete set (one chamber) of Sealing rings and Gaskets	Sets	1			
<b>3.5</b>	<b>For 12kV VCB Switchgear</b>					
3.5.1	Complete set of 12 kV Vaccum Interrupter	Nos.	2			
3.5.2	Tripping Coils assembly with resistor as applicable	Nos.	6			
3.5.3	Closing Coils assembly with resistor as applicable	Nos.	6			
3.5.4	Spring Charging Motor	Set	2			
3.5.5	3 Phase Overcurrent Relay for 11kV Side, one of each type	Sets	1			
3.5.6	Earth Fault Relay for 11kV Side, one of each type	Sets	1			
3.5.7	Ammeter	Nos.	1			
3.5.8	Voltmeter	Nos.	1			
3.5.9	kVA Meter	Nos.	1			
3.5.10	11 kV CTs of each type used ( 3 Nos)	Sets	1			
3.5.11	Operating Handle	Sets	1			
3.5.12	Indicating Lamps and fuses (100% of used)	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		Unit	Quantity	FC		
				Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
3.5.13	12 kV XLPE Cable termination kit (three phase) including all accessories complete	Set	3			
3.5.14	12 kV XLPE Cable termination kit (single phase) including all accessories complete	Set	9			
<b>3.6</b>	<b>For 145kV Disconnecting Switches/ISOLATORS</b>					
3.6.1	Complete set of 3-phase disconnecter including main circuit with enclosure	Set	1			
3.6.2	3-phase Earthing switch including main circuit, enclosure, driving mechanism.	Set	1			
3.6.3	Copper contact fingers for dis-connector male & female contact for one complete (3 phase) dis-connector of each type and rating	Set	1			
3.6.4	Copper contact fingers for earthing switch male & female contacts, for one complete (3 phase) earthing switch of each type and rating	Set	1			
3.6.5	Open / Close contactor assembly, timers, key interlock for one complete (3 phase) dis-connector and (3 phase) earthing switch of each rating (1 No. of each type and rating)	Set	1			
3.6.6	Procelain Insulator	Nos.	4			
3.6.7	Main Contact Assemblies (one assembly)	Set	4			
3.6.8	Auxiliary Contacts Assemblies (one assembly)	Sets	2			
3.6.9	Interlocking Coil	Nos.	2			
3.6.10	Motor for driving mechanism	Nos.	2			
3.6.11	Contact for the mechanism	Nos.	2			
3.6.12	Push button switch - (1 No. of each type & rating) as applicable	Set	1			
3.6.13	Limit switch and Aux. Switches for complete 3 phase equipment					
(a)	For Isolator	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
(b)	For Earth switch	Set	1			
<b>3.7</b>	<b>For 36kV Disconnecting Switches</b>					
3.7.1	Complete set of 3-phase disconnecter including main circuit with enclosure	Set	1			
3.7.2	3-phase Earthing switch including main circuit, enclosure, driving mechanism.	Set	1			
3.7.3	Procelain Insulator	Nos.	4			
3.7.4	Main Contact Assemblies (one assembly)	Set	3			
3.7.5	Auxiliary Contacts	Sets	2			
3.7.6	Interlocking Coil	Nos.	2			
3.7.7	Push button switch (1 No. of each type & rating) as applicable	Set	1			
3.7.8	Limit switch and Aux. Switches for complete 3 phase equipment					
(a)	For isolator	Set	1			
(b)	For earth switch	Set	1			
<b>3.8</b>	<b>For Instrument Transformers of used type</b>					
3.8.1	145 kV Current Transformer (excluding support structure and common JB) for transformer	Nos.	1			
3.8.2	145 kV Current Transformer (excluding support structure and common JB) for line and bus coupler	Nos.	2			
3.8.3	145 kV Capacitive Voltage Transformer (excluding support structure and common JB)	Nos.	2			
3.8.4	36 kV Current Transformer (excluding support structure and common JB)	Nos.	2			
3.8.5	36 kV Potential Transformer (excluding support structure and common JB)	Nos.	2			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
3.8.6	Secondary bushing for 145 kV Current Transformer of each type and rating	Set	1			
3.8.7	Secondary bushing for 36 kV Current Transformer of each type and rating	Set	1			
<b>3.9</b>	<b>For Lightning Arrestor of used type with insulating base, terminal connector, Surge counter &amp; accessories (excluding support structure)</b>					
3.9.1	120 kV Single Phase Lightning Arrestor (pedestal-type)	Nos.	4			
3.9.2	30 kV Single Phase Lightning Arrestor (pedestal-type)	Nos.	3			
3.9.3	9 kV Single phase Lightning Arrestor (Pedestal-type)	Nos.	6			
<b>3.10</b>	<b>For Relay and Protection (132 kV)</b>					
<b>3.10.1</b>	<b>Line Protection Panel</b>					
3.10.1.1	Numerical Distance Relay for Line Protection	Set	1			
<b>3.10.2</b>	<b>Transformer Protection Panel</b>					
3.10.2.1	3 Phase Transformer Differential Protection Relay	Set	1			
3.10.2.2	3 Phase Directional Overcurrent with Earthfault Protection Relay	Set	1			
3.10.2.3	Restricted earth fault protection relay with non-linear resistor	Set	1			
<b>3.10.3</b>	<b>Common Spares</b>					
3.10.3.1	Breaker failure Relay	No.	1			
3.10.3.2	Trip-Circuit Supervision Relay	No.	2			
3.10.3.3	Self reset trip relay (relay of each type)	Set	1			
3.10.3.4	Hand reset trip relay (relay of each type)	Set	1			



## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
3.10.3.5	Timer relay (relay of each type)	Set	1			
3.10.3.6	DC supervision relay (relay of each type)	Set	1			
3.10.3.7	Flag relays (relay of each type)	Set	1			
3.10.3.8	Auxiliary relays (relay of each type)	Set	1			
3.10.3.9	Synchro Check Relay	No.	1			
3.10.3.10	Indicating Lamps( 50% of used)	Lot	1			
3.10.3.11	Fuses of each type (50% of used)	Lot	1			
3.10.3.12	Color Caps of each color for indicating lamps (30% of used)	Lot	1			
3.10.3.13	One of each type of Switch, Timer and other special devices	Set	1			
3.10.3.14	Watt meter	No.	1			
3.10.3.15	Energy meter	No.	2			
3.10.3.16	MVAR meter	No.	1			
3.10.3.17	Frequency meter	No.	1			
3.10.3.18	Ammeter	Nos.	4			
3.10.3.19	Voltmeter	Nos.	4			
<b>3.11</b>	<b>For Relay and Protection (33 kV)</b>					
<b>3.11.1</b>	<b>Line Protection Panel</b>					
3.11.1.1	3 Phase Directional Overcurrent & Earthfault Protection Relay	Set	1			
<b>3.11.2</b>	<b>Transformer Protection Panel</b>					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
3.11.2.1	3 Phase Transformer Differential Protection Relay	Set	1			
3.11.2.2	3 Phase Directional Overcurrent with Earthfault Protection Relay	Set	1			
3.11.2.3	Restricted earth fault protection relay with non-linear resistor	Set	1			
<b>3.11.3</b>	<b>Common Spares</b>					
3.11.3.1	Breaker failure Relay	No.	1			
3.11.3.2	Trip-Circuit Supervision Relay	No.	2			
3.11.3.3	Self reset trip relay (relay of each type)	Set	1			
3.11.3.4	Hand reset trip relay (relay of each type)	Set	1			
3.11.3.5	Timer relay (relay of each type)	Set	1			
3.11.3.6	DC supervision relay (relay of each type)	Set	1			
3.11.3.7	Flag relays (relay of each type)	Set	1			
3.11.3.8	Auxiliary relays (relay of each type)	Set	1			
3.11.3.9	Indicating Lamps( 50% of used)	Lot	1			
3.11.3.10	Fuses of each type (50% of used)	Lot	1			
3.11.3.11	Color Caps of each color for indicating lamps (30% of used)	Lot	1			
3.11.3.12	One of each type of Switch, Timer and other special devices	Set	1			
<b>3.12</b>	<b>110 V Battery Charger</b>					
3.12.1	Set of Control Cards	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

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Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
3.12.2	Set of relays	Set	1			
3.12.3	Rectifier transformer	No.	1			
3.12.4	Thyristor/ Diode	Set	1			
3.12.5	Fuses of Thyristor with indicators	Set	6			
3.12.6	Fuses of each type(50% of used)	Lot	1			
3.12.7	Indicating Lamp (50% of used)	Lot	1			
3.12.8	Ammeter	No.	1			
3.12.9	Voltmeter	No.	1			
<b>3.13</b>	<b>48 V Battery Charger</b>					
3.13.1	Set of Control Cards	Set	1			
3.13.2	Set of relays	Set	1			
3.13.3	Rectifier transformer	No.	1			
3.13.4	Thyristor/ Diode	Set	1			
3.13.5	Fuses of Thyristor with indicators	Set	6			
<b>3.14</b>	<b>Monitoring, Testing and Analyzing Equipments</b>					
3.14.1	Three Phase Relay Testing Kit as per specification	Set	1			
3.14.2	Portable DC Earth Fault Locator as per specification	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

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Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
3.14.3	Earthing Resistance Tester as per specification	Set	1			
3.14.4	Non-Contact Voltage along with 5 meter telescopic fiber glass rod as per specification	Set	1			
3.14.5	Digital Multimeter as per specification	Nos.	5			
3.14.6	Tong Tester as per specification	Nos.	2			
3.14.7	HV Insulation Tester as per specification (5 kV)	Set	1			
3.14.8	Transformer Oil Test Kit (Digital, 80 kV) as per specification	Nos.	1			
<b>3.15</b>	<b>Communication/SCADA</b>					
3.15.1	Digital Protection Coupler	Set	2			
3.15.2	SDH Equipment with MPLS - TP facility					
(i)	Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks (Additional Sub Rack if required to accommodate all facilities including SDH and MPLS - TP mentioned above) , patch cord, DDF etc. fully equiped excluding (ii) & (iii) below	Set	1			
(ii)	Optical Interface Cards/SFP for					
(a)	L4.2 SFP	Nos.	2			
(b)	10 G SFP	Nos.	2			
(iii)	Tributary cards					
(a)	E1 Interface card (Min.8 interfaces per card)	Nos	1			
(b)	Fast -Ethernet Interface 10/100 Mbps Base T with Layer-2 switching (Min. 8 Interfaces per card)	Nos.	1			
3.15.3	VOIP telephone instrument with one common switch (min. 8 port)	Nos.	1			
<b>3.16</b>	<b>For Networking &amp; Visual Monitoring System</b>					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

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Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
3.16.1	Dual band Router, Wi-Fi 6 / IEEE 802.11ac compatible	Nos.	2			
3.16.2	Wireless Access Points	Nos.	2			
3.16.3	Full HD Video IP Camera with Infrared	Nos.	3			
3.16.4	Infrared Night Vision Optical Zoom camera	Nos.	2			
3.16.5	Night Vision speed Optical Zoom camera	Nos.	1			
3.16.6	32CH NVR/DVR with 2TB SSD	Nos.	1			
<b>3.17</b>	<b>For Erection Hardware</b>					
3.17.1	3% spares of the actual quantities for Insulator strings & hardwares, clamps & connectors (including equipment connectors), spacers, corona bell and welding sleeves.	LS	1			
<b>3.18</b>	<b>For LV Indoor Switchgear</b>					
3.18.1	Each type of MCB, MCCB, ELCB	LS	1			
<b>3.19</b>	<b>For Fire Fighting System</b>					
3.19.1	Recommended Spares	LS	1			
<b>3.20</b>	<b>For DG Set</b>					
3.20.1	Self starter assembly	No.	1			
3.20.2	AVR (Auto Voltage Regulator)/ AVR card	Set	1			
<b>3.21</b>	<b>Bus post Insulators</b>					
3.21.1	132 kV post insulator	Nos.	9			
3.21.2	33 kV post insulator	Nos.	6			
	<b>Sub-Total of Part - D of Mandatory Spares parts</b>					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and Associated Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 1B: Plant and Equipment including Mandatory Spares to be supplied from Abroad including Insurance, Clearing, Forwarding and Transportation up to site.**

Item No.	Item Description	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)		REMARKS
		FC		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
<b>Total of Part I : 132/33/11 kV AIS New Nepalgunj Substation</b>						-
<b>Part II: Dead-End Tower at Substation - 2 Nos.</b>						
1	Design, Supply and Delivery of Materials for 132 kV DD Type TOWER PARTS (132 kV Double Circuit BEAR Tower) - 2 Nos. as per approved drawing and technical specifications.					
1.1	Fabrication, galvanising & supply of DD Type tower & tower parts, tower/leg extensions (complete) including stubs, bolts and nuts, step bolts, hangers, D-shackles, pack plates, pack washers					
1.1.1	Stubs	No.	6			
1.1.2	Stubs- Raised Chimney (0.5M/1 M )	No.	2			
1.1.3	Basic Tower DD type	No.	2			
1.1.4	DD +6 m Girder/Body Extension	No.	2			
1.1.5	DD +6 m Leg Ext	No.	2			
1.2	Insulator strings with insulators, attachment assemblies and arcing horns all complete for ACSR "BEAR" conductor and attachment assemblies all complete for Earthwire and OPGW					
1.2.1	Double tension insulator string for "BEAR" with compression clamps all complete long rod Polymer Insulator (650kV BIL long rod polymer insulator)	Set	18			
1.2.2	Stockbridge Vibration damper for BEAR Conductor with preformed armour rods	Set	24			
1.2.3	OPGW tension preformed assembly complete for one tower (one set/tower)	Set	2			
1.2.4	Stockbridge Vibration damper for OPGW overhead ground wire with preformed armour rods	Set	4			
1.3	Optical fiber ground wire including intermediate splice boxes, terminal splice boxes and additional length as required	m	300			
1.4	Pipe Type earthing complete with pipe, flat, salt, sand & charcoal	Set	1			
<b>Total of Part II: Dead-End Tower at Substation - 2 Nos.</b>						
<b>Total of Schedule- 1B</b>						



## Schedule of Rates and Prices

## NEPAL ELECTRICITY AUTHORITY

Project Management Directorate

## Kohalpur-Nepalgunj 132 kV Transmission Line Project

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01: Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and Associated Substation (AIS) at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule 3B: Design Services**

Item No.	Item Description	Estimated		Unit Price		Total Price		Remarks
		Unit	Quantity	Local Currency Portion (LC)	Foreign Currency Portion (FC)	Local Currency Portion (LC)	Foreign Currency Portion (FC)	
1	2	3	4	5	6	7 = 4x5	8 = 4x6	
	Not Applicable							
<b>Total of Schedule - 3B</b>								

NOTE: Design Services and Prototype Testing costs of all other items shall be include in Schedule-1 or in Schedule-2 by the bidder.

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



## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)				
		Unit	Quantity	Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
<b>Part I: 132/33/11 kV New Nepalgunj Substation (AIS)</b>						
<b>1</b>	<b>Electrical, SAS and Communication Works</b>					
	<b>PART - A : EMPLOYER ASSESSED QUANTITIES</b>					
<b>1.1</b>	<b>Transformers</b>					
<b>1.1.1</b>	<b>Power Transformer</b>					
1.1.1.1	132/33 kV, Three phase, 51/63 MVA, ONAN/ONAF Power Transformer complete with On Load Tap Changer (OLTC) & RTCC facility, Tank Mounted LA at LV side and Bushing CT on both sides, Oil filled, star/star connected complete with all accessories as specified in technical Specification.	Set	2			
1.1.1.2	33/11 kV, Three phase, 10/13.33/16.66 MVA, ONAN/ONAF1/ONAF2 Power Transformer complete with On Load Tap Changer (OLTC) & RTCC facility, Tank Mounted LA at LV side and Bushing CT on both sides, Oil filled, delta/star connected complete with all accessories as specified in technical Specification.	Set	2			
<b>1.1.2</b>	<b>Station Supply Transformer</b>					
1.1.2	200 kVA, 33/0.4 kV, Three phase, ONAN, delta/star connected, Off load Tap Changer, Distribution Transformer with all other accessories as specified in technical Specification.	Set	2			
<b>1.2</b>	<b>Circuit Breakers and Switchgears with support structures</b>					
1.2.1	145 kV, 1600 A, 3 phase, SF6 Circuit Breaker (individual pole operation type) complete with all accessories and support structures as per specification for incoming/outgoing 132 kV lines	Set	4			
1.2.2	145 kV, 1600 A, 3 phase, SF6 Circuit Breaker (three pole operation type) complete with all accessories and support structures as per specification for 2 nos. of 132/33 kV Power Transformers	Set	2			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.2.3	145 kV, 2000 A, 3 phase, SF6 Circuit Breaker (three pole operation type) complete with all accessories and support structures as per specification for 132 kV Bus Coupler	Set	1			
1.2.4	36 kV, 1250 A, 3 phase, Vaccum Circuit Breaker (three pole operation type) complete with all accessories and support structures as per specification for 132/33 kV transformer	Set	2			
1.2.5	36 kV, 800 A, 3 phase, Vaccum Circuit Breaker (three pole operation type) complete with all accessories and support structures as per specification for 7 outgoing 33 kV feeder and 2 Power Transformer.	Set	8			
<b>1.3</b>	<b>Disconnecter Switches/Isolators</b>					
1.3.1	145 kV, 2000 A, 3 phase, Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for Bus Coupler	Set	2			
1.3.2	145 kV, 1600 A, 3 phase Double Break Disconnecter Switch with one Grounding Switch complete with all accessories as per specification for 132 kV incoming/outgoing Lines	Set	4			
1.3.3	145 kV, 1600 A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification	Set	16			
1.3.4	145 kV, 1600 A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for using as By-pass isolator for 132 kV Lines	Set	4			
1.3.5	36 kV, 1600 A, 3 phase Bus-Sectionalizer Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification	Set	1			
1.3.6	36 kV, 1250A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for 33 kV incoming lines	Set	2			
1.3.7	36 kV, 800 A, 3 phase Double Break Disconnecter Switch with one Grounding Switch complete with all accessories as per specification for 33 kV outgoing lines	Set	6			
1.3.8	36 kV, 800 A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for 7 nos. of 33 kV lines and 2 nos. of transformers	Set	8			
1.3.9	36 kV, 400 A, 3 phase Double Break Disconnecter Switch (without Grounding Switch) complete with all accessories as per specification for 2 nos. of station transformers	Set	2			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
<b>1.4</b>	<b>Instrument Transformers</b>					
1.4.1	145 kV, 50 VA, 132/√3 /110/√3/ 110/√3 kV, Class 0.2/3P, Capacitor Voltage Transformer (1-phase) complete with all accessories as per specification	Nos.	18			
1.4.2	145 kV, 30 VA, 5 core, Class 0.2, 1200-800-600/1 A, Current Transformer (1-phase) complete with all accessories as per specification for 132 kV Line bays	Nos.	12			
1.4.3	145 kV, 30 VA, 5 core, Class 0.2, 1600-1000/1 A, Current Transformer (1-phase) complete with all accessories as per specification for 132 kV Bus coupler	Nos.	3			
1.4.4	145 kV, 30 VA, 5 core, Class 0.2, 900-600-300/1 A, Current Transformer (1-phase) complete with all accessories as per specification for 132/33 kV Power Transformers	Nos.	6			
1.4.5	36 kV, 30 VA, 33/√3/ 110/√3/ 110/√3 kV, Class 0.2/3P, Voltage Transformer (1-phase) complete with all accessories as per specification(Line PT not required for 33kV)	Nos.	12			
1.4.6	36 kV, 30 VA, 3 core, Class 0.2, Multi ratio, Current Transformer (1-phase) complete with all accessories as per specification	Nos.	30			
<b>1.5</b>	<b>Lightening Arrestor</b>					
1.5.1	120 kV, 10 kA Lightening Arrestor (1-phase) including Discharge Counter complete with all accessories as per specification	Nos.	18			
1.5.2	30 kV, 10 kA Lightening Arrestor (1-phase) complete with all accessories as per specification	Nos.	30			
1.5.3	9 kV, 10 kA Lightening Arrestor complete (1-phase) with all accessories as per specification	Nos.	18			
<b>1.6</b>	<b>Control and Relay Panel with Automation</b>					
1.6.1	132 kV Transmission Line Control and Relay Panel complete with all accessories as per specification for incoming/outgoing 132 kV Line	Set	4			
1.6.2	132/33 kV Transformer Control and Relay Panel complete set for HV and LV side with all accessories as per specification	Set	2			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.6.3	132 kV bus coupler cum bus bar protection control and relay panel complete with all accessories as per specification	Set	1			
1.6.4	33/11 kV Transformer Control and Relay Panel complete set for HV and LV side with all accessories as per specification	Set	2			
1.6.5	33 kV Sub-transmission Line Control and Relay Panel complete with all accessories as per specification for outgoing 33 kV Line	Set	6			
1.6.6	Time Synchronisation Equipment as per specification pertaining to C & R System	No.	1			
<b>1.7</b>	<b>12 KV, 25kA, 3 sec, 3-phase Indoor Switchgear Panel with all accessories</b>					
1.7.1	12 kV Transformer Incomer Module (2000A) with VCB, CRP, CT and all accessories as per technical specification	Set	2			
1.7.2	12 kV Line Outgoing Module (800A) with VCB, CRP, CT and all accessories as per technical specification	Set	6			
1.7.3	12 kV Bus Coupler Module (2500A) with all accessories as per technical specification	Set	1			
1.7.4	12 kV PT module with all accessories as per technical specification	Set	2			
<b>1.8</b>	<b>Substation Automation System (SAS)</b>					
1.8.1	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	Bay Nos.	7			
ii.	33 kV System	Bay Nos.	10			
iii.	11 kV System (Indoor Switchgear)	Bay Nos.	8			
iv.	BCU for controlling & monitoring of auxilliary system	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
<b>1.9</b>	<b>Teleprotection &amp; Communication Equipments</b>					
1.9.1	Digital Protection Coupler with sub Rack	Nos.	8			
1.9.2	SDH Equipment with MPLS - TP facility (STM -4 upto 4 MSP Protected directions as well as 10 G 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 (Additional Sub Rack if required to accomodate all facilities including SDH and MPLS - TP mentioned above) , patch cord, DDF etc. fully equiped excluding (ii) & (iii) below	Nos.	1			
(ii)	Optical Interface Cards/SFP					
(a)	L4.1 SFP(For Integration with SDH Equipment at Kohalpur Substation and Bhurigaun Substation)	Nos.	8			
(b)	10 G SFP(For Integration with FOX615 Equipment at Syuchatar Substation)	Nos.	4			
(iii)	Tributary cards		0			
(a)	E1 Interface card (Min. 8 interfaces per card)	Set	2			
(b)	Fast -Ethernet Interface 10/100 Mbps Base T with Layer-2 switching (Min. 8 Interfaces per card)	Nos.	3			
1.9.3	Equipment Cabinets	No.	1			
1.9.4	VOIP telephone instrument with one common POE+switch (min. 8 port)	Nos.	2			
<b>1.10</b>	<b>Station Supply, LV Switchgear (As per Technical specification)</b>					
1.10.1	400V AC Main Switch Control Panel including MCB, Cable and accessories for the specified scope of the work.	Set	1			
1.10.2	400V AC Distribution Board (ACDB ) including Cable and accessories for the specified scope of the work.	Set	2			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.10.3	400V AC Main Lighting Distribution Board (MLDB) including Cable and accessories for the specified scope of the work.	Set	1			
1.10.4	400V AC Emergency Distribution Board including Cable and accessories for the specified scope of the work.	Set	1			
1.10.5	110 V DC Distribution Board including cable and accessories to complete the specified scope of work.	Set	1			
1.10.6	48 V DC Distribution Board including cable and accessories to complete the specified scope of work.	Set	1			
<b>1.11</b>	<b>Power Cables with clamps, glands, lugs and straight joints etc. in Cable Trench</b>					
1.11.1	Installation of 12 kV, 400 sq. mm, Single core, XLPE insulated Copper conductor armoured Power Cable including Straight Joints and termination joints for both ends with other required accessories complete as per Drawing and specification for Two cables per phase from LV sides of both 33/11 kV, 3 phase, Power Transformers upto 2 nos. of Indoor 11 kV Switchgear Module Panels in the switchgear room . (2*2*3=12 nos. of single core power cable)	m	1000			
1.11.2	Installation of 12 kV, 240 sq.mm, 3 core, XLPE insulated Copper conductor armoured Power Cable including cable termination joints at both ends with other required accessories complete as per Drawing and specification for 6 nos. of Outgoing 11 kV Distribution Feeders.	m	1000			
<b>1.12</b>	<b>Battery / Battery Charger</b>					
1.12.1	Dual Mode Float Cum Boost Battery charger for 110 V battery complete with all accessories to complete the specified scope of work.	Set	2			
1.12.2	110 V, 600 AH maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work.	Set	2			
1.12.3	Dual Mode Float Cum Boost Battery charger for 48 V battery complete with all accessories to complete the specified scope of work.	Set	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.12.4	48 V, 300 AH maintenance free lead acid sealed type battery complete with all accessories to complete the specified scope of work.	Set	1			
<b>1.13</b>	<b>Fire Detection &amp; Alarm System</b>					
1.13.1	50 litre foam type, Portable/Trolley/Wheel mounted fire extinguishers	Nos.	4			
1.13.2	4.5 kg CO <sub>2</sub> type, Fire Extinguisher	Nos.	10			
1.13.3	22.5 kg Dry Chemical Power (DCP) type, Trolley/Wheel mounted fire extinguishers	Nos.	3			
1.13.4	Smoke detection system in Control Room Building cum Administrative Building as per technical Specification and approved drawing	set	1			
1.13.5	Fire detection and Alarm System in Control Room cum Administrative Building as per technical Specification and approved drawing	set	1			
<b>1.14</b>	<b>Monitoring and Analyzing Equipment</b>					
1.14.1	Online monitoring Equipment of fault gases, air components and moisture in transformer insulating fluids (Dissolved gas Analyzer) of 132/33 kV Power Transformer with Inside View (Analysis Software) as per specification	Set	2			
<b>1.15</b>	<b>Air Conditioning system as per technical specification and approved drawing</b>					
1.15.1	Ceiling cassette type split AC unit of 3 TR capacities including Ceiling cassette for 132 kV control room	Nos.	4			
1.15.2	High wall type split AC unit of 2 TR capacities for switchgear room	Nos.	2			
1.15.3	High wall type split AC unit of 1.5 TR capacities for Office room, communication room, battery room and Township (Staff Quarters) buildings	Nos.	10			
<b>1.16</b>	<b>Bus Post/Support Insulators including all other accessories required to complete the specified scope of work for</b>					
1.16.1	132 kV Bus	Nos.	78			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.16.2	33 kV Bus	Nos.	42			
<b>1.17</b>	<b>Diesel Generator with control Panel</b>					
1.17.1	50 kVA Silent type Diesel Generator (400/230 V, 50 Hz) with control Panel & AMF panel as per technical specification for fire fighting system	Set	1			
	<b>Sub-total of Part - A of Electrical, SAS and Communication Works</b>					
	<b>PART - B: CONTRACTOR ASSESSED QUANTITIES</b>					
<b>1.18</b>	<b>Power &amp; Control cables with fitting accessories</b>					
1.18.1	1.1 kV grade PVC/XLPE insulated Power and lighting cable (Copper) for proper connection of electrical works in Control room building, Staff quarters, Security (Guard) room, Store buliding, Pump house, Fire fighting system, Switchyard lighting, Road & Street lighting and other necessary places and circuits to complete the specified scope of work as per Technical specification and approved drawing.	Lot	1			
1.18.2	1.1 kV grade PVC insulated Control cable (Copper) to complete the specified scope of works including that for communication and networking system works as per Technical specification and approved drawing.	Lot	1			
1.18.3	Cable glands, lugs & straight through joints for Power & Control cables	Lot	1			
<b>1.19</b>	<b>Communication / SCADA (Based on IEC 61850)/SAS</b>					
1.19.1	Optical Distribution Frame complete in all respects as per technical specifications	Lot	1			
1.19.2	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			



## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation, Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.19.3	Integration of all 132/33/11 kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu and remote operation including supply of Hardware, Software, accessories etc. as per TS Section of the Project.	Lot	1			
1.19.4	Integration of all Bays with the MCC at Butwal Substation including supply of Hardware, Software, accessories etc. to complete scope of work.	Lot	1			
<b>1.20</b>	<b>Visual Monitoring System</b>					
1.20.1	Visual Monitoring System for watch & ward as per technical specification and approved drawing	Lot	1			
<b>1.21</b>	<b>Fire Protection System as per technical Specification and approved drawing</b>					
1.21.1	Pumping arrangement for HVW system & hydrant system complete with all piping, valves, fittings etc. inside pump house.	Lot	1			
1.21.2	Hydrant system, complete U/G piping and accessories etc. outside the Pump House for all transformers and equipment.	Lot	1			
1.21.3	HVW spray system, Hydrant system and complete U/G & O/G piping and accessories etc. out side the pump house for :					
1.21.3.1	63 MVA, 132/33 kV Three Phase Power Transformer and equipment	Sets	2			
1.21.3.2	24 MVA, 33/11 kV Three Phase Power Transformer and equipment	Sets	2			
<b>1.22</b>	<b>Earthing and lightning protection</b>					
1.22.1	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 as per technical Specification and approved drawing.	lot	1			
1.22.2	Earthing system of substation with Copper conductors, copper clad steel Earth Rod with necessary connectors/connections, risers etc. complete in all respect as per technical Specification and approved drawing.	Lot	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.22.3	Equipment for lightning protection of substation including necessary connectors/connections, risers etc. complete in all respect ( but excluding LM structures for Lightning protection) as per technical Specification and approved drawing.	Lot	1			
<b>1.23</b>	<b>Erection Hardwares and Miscellaneous material as per technical Specification and approved drawing</b>					
1.23.1	145 kV Insulator Strings, Disc/support Insulators, necessary hardwares, Clamps, spacers, connectors for Transformer, Substation Works and connection between Line Tower, Take Off Gantry and Internal Gantry structure etc. all complete as per the specification to complete the specified scope of works for 7 bays.	Lot	1			
1.23.2	36 kV Insulator Strings, Disc/support Insulators, necessary hardwares, Clamps, spacers, connectors for Transformer, Substation Works and connection between Line Tower, Take Off Gantry and Internal Gantry structure etc. all complete as per the specification to complete the specified scope of works for 6 bays and 2 station transformers.	Lot	1			
1.23.3	132 kV Tubular Bus (Outer Dia 100 mm and thickness 10 mm capable of carrying 2500 A ), expansion joint including all other Accessories required to complete 132 kV double bus-bar configuration as per the specified scope of work	Lot	1			
1.23.4	ACSR "CARDINAL" Conductors for 132kV switchyard and substation works with necessary hardwares and accessories to complete the specified scope of works for Line Tower to Take Off and Internal Gantry Structure (including stringing of conductor between tower to gantry for 132kV)	Lot	1			
1.23.5	33 kV Tubular Bus (Dia 75 mm, thickness 8 mm) including branch bus -bars for 33 kV and other accessories required to complete the specified scope of work	Lot	1			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
1.23.6	ACSR "CARDINAL" conductors for 33 kV switchyard with necessary hardwares and accessories for substation works and for overhead connections to the 33 kV lines at the gantry as required to complete the specified scope of works	Lot	1			
1.23.7	36 kV Horn Gap Fuse along with support insulator (1-phase) and other accessories as required to complete the specified scope of work for primary connection of 33/0.4 kV station service Transformer.	Nos.	6			
<b>1.24</b>	<b>Illumination System</b>					
1.24.1	Lighting system (Outdoor and Peripheral) for Switchyard, Substation area, Entrance & Internal Roads, outdoor area of Control Room, Township (Staff Quarters), Security room, store and fire fighting pump house buildings, Boundary wall periphery & along main approach roads (with support wherever necessary), occupancy sensor and Street lights etc. to complete the specified scope of works as per technical specification and approved drawing.	Lot	1			
1.24.2	Emergency DC lighting system with necessary accessories all complete for control room, switchyard and substation gate area as per technical specification	Set	15			
	<b>Sub-total of Part - B of Electrical, SAS and Communication works</b>					
	<b>Total of Electrical, SAS and Communication Works of AIS Substation</b>					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
<b>2</b>	<b>CIVIL AND ARCHITECTURAL WORKS</b>					
	<b>PART - C : EMPLOYER ASSESSED QUANTITIES</b>					
<b>2.1</b>	<b>Installation works of Steel structure for Gantry, post, beam and equipment supporting frame complete with bolts, fastner, pack washer, nuts, gusset plates &amp; accessories (For 132 and 33 kV side) and various electrical equipments as per technical specification and approved drawings</b>					
2.1.1	132 kV Take Off Gantry structure for 2 nos. of incoming & 2 nos. of outgoing line bays, one no. of bus coupler bay, 2 nos. of transformer bays including internal gantry, tower & beam structures and bus bar support as per scope of contract	Bays	7			
2.1.2	132 kV SF6 Circuit Breaker (3-phase)	Sets	7			
2.1.3	132 kV Disconnecter Switch/Isolator with Earth Switch (3-phase)	Sets	4			
2.1.4	132 kV Disconnecter Switch/Isolator without Earth switch (3-phase)	Sets	22			
2.1.5	132 kV Capacitive Voltage Transformer (1-phase)	Nos.	18			
2.1.6	132 kV Current Transformer (1-phase)	Nos.	21			
2.1.7	120 kV Lightening Arrestor (1-phase)	Nos.	18			
2.1.10	33 kV Gantry structure for 2 nos. of incoming & 7 nos. of outgoing line bays, 4 nos. of transformer bays including internal gantry, tower & beam structures and bus bar support as per scope of work	Bays	12			
2.1.11	33 kV Vaccum Circuit Breaker (3-phase)	Sets	10			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
2.1.12	33 kV Disconnecter Switch/Isolator with Earth Switch (3-phase)	Sets	6			
2.1.13	33 kV Disconnecter Switch/Isolator without Earth Switch (3-phase)	Set	11			
2.1.14	33 kV Voltage Transformer (1-phase)	Nos.	12			
2.1.15	33 kV Current Transformer (1-phase)	Nos.	30			
2.1.16	30 kV Lightening Arrestor (1-phase)	Nos.	30			
2.1.19	9 kV Lightning Arrestor (3 Nos. per set) with accessories all complete and connection with earthing	Sets	18			
2.2	<b>Installation works of Lattice/Pipe Structure including peak plates/pack washers and gusset plates including foundation bolts (nuts, washers, MS plate welded at the bottom) as per approved drawings and technical specifications for additional items not included in above S.N. 2.1 of Steel structure of Towers, Gantry structures &amp; Equipment support structures.</b>					
(a)	Lattice structure including Foundation bolts	MT	1			
(b)	Pipe Structure including Foundation Bolts	MT	1			
(c)	Fastners for towers, beams and equipment support structures	MT	0.5			
	<b>Sub-total of Part - C of Installation works of Steel Structures</b>					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
2.3	<b>Civil Works (MATERIAL PLUS LABOUR) as per technical specification and approved drawings</b>					
	<b>PART - D: CONTRACTOR ASSESSED QUANTITIES</b>					
2.3.1	Site preparation work	Sq.m	4250			
2.3.2	Geotechnical /Soil Investigation as per technical specification	Loc	5			
2.3.3	Soil Resistivity test	lot	1			
2.3.4	Exploration works for soil strength of foundations including laboratory tests for Substation and Dead End Tower as per specified	lot	1			
2.3.5	Site levelling					
(a)	Earth work in cutting & Filling in all types of soils including soft/disintegrated rock with all leads and lifts within sub station boundary	Cu.m	10			
(b)	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 as per TS	Cu.m	73737.5			
2.3.6	Excavation works in all types of soil and rock including backfilling disposal etc. for all leads and lifts for 132kV and 33kV Switchyard, Control Building, Cable trench, Township (Staff Quarters), Store, security room (Guard House), Fire Fighting Pump House, Approach Road, Retaining Wall, underground Water tank etc. and other locations	Cu.m	21000			
2.3.7	All civil works for Boundary wall including excavation, concrete, reinforcement steel, structural steel, plaster, painting, barbed wire and concertina coil etc. all complete as per technical specification and approved drawing (2.5 m high brick masonry and 0.5 m high angle supports with barbed wire and concertina coil at top of wall)	R-m	854			
2.3.8	Providing and laying of Plain Cement Concrete (PCC) (1:4:8; C:S:A)	Cu.m	275			
2.3.10	Providing and laying of Plain Cement Concrete (PCC) (1:2:4; C:S:A)	Cu.m	100			
2.3.11	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)	Cu.m	675			
2.3.12	Plum Concrete work of ratio 40% plums/boulders and 60% concrete of M15 etc. all complete as per technical specification and approved drawing	Cu.m	100			
2.3.13	Stone filling (40mm) over grating of Transformer /reactor Foundation	Cu.m	50			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
2.3.14	Stone spreading (40 mm size) including antiweed treatment in Switch yard but excluding PCC	Sq.m	10000			
2.3.15	Stone soling below foundations wherever specified in aproved drawings during detailed Engineering	Cu.m	125			
2.3.16	Local Sand filling around and under DG Set Foundation and other foundations as applicable.	Cu.m	5			
2.3.17	Providing and laying of Reinforced Cement Concrete Design Mix of Grade M25 (1:1.5:3) including pre cast, shuttering, Grouting of pockets & underpinning but excluding steel reinforcement	Cu.m	3250			
2.3.18	Cutting, bending, placing of Steel reinforcement with binding wire for RCC as per drawing, Steel Reinforcement (Fe 500)	MT	380			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
2.3.19	Miscellaneous Structural steel used for rails , plates for rail fixing, gratings, gratings supports etc. for transformer /reactor foundation, cable supportst and earthing cleats, chequered plates, embedments, edge protection angles for cable trenches but excluding the reinforcement steel and steel for lattice and pipe structures which shall be paid seperately under respective items of BPS	MT	28			
2.3.20	<b>CONTROL ROOM BUILDING</b>					
	All Civil works for Control Room cum Administrative Building including external & internal finishing, internal cable trench, electrification, air conditioning, sanitary and plumbing works, water supply, Doors, windows, False celing, Painting, Furnitures and miscellaneous work etc. all complete as per technical specification and approved drawings but excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS (Plinth area measurement)	Sq. m.	417			
2.3.21	<b>Other Buildings and Structures</b>					
	All civil works for following Buildings and structures including external & internal finishing, electrification, sanitary and plumbing works, Doors, windows, Painting, Furnitures and miscellaneous work etc. all complete as per technical specification and approved drawings but excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS :					
2.3.21.1	Township (Staff Quarters) as per TS					
(a)	B - Type (Three story, plinth Area 256 Sq.m.) - 1 No.	Sq. m.	768			
(b)	C - Type (Two story, plinth Area 305 Sq.m.) - 1 No.	Sq. m.	625			
2.3.21.2	Store (one story) building as per TS	Sq. m.	90			
2.3.21.3	Fire fighting pump house building as per TS	Sq. m.	99			



## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
2.3.21.4	Fire fighting Water tank as per TS	LS	1			
2.3.21.5	Vehicle Parking shed (for 5 Nos. of 4 wheelers/cars) as per TS	LS	1			
2.3.22	All civil works for one storey security room (Guard house) as per as per technical specification and approved drawing including septic tank and soak pit, Internal and external finish, sanitary and plumbing works, Doors, windows, Painting, plinth protection etc. to complete the building but excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS.	Sq.m	37.8			
2.3.23	Construction of Concrete road as per technical specification and approved drawing including all items such as excavation, cut & fill, extra widening, compaction, rolling, watering and surface preparation with Water Bound Macadam of thickness 100 mm but excluding reinforcement & concrete which shall be paid seperately under respective items of BPS					
(a)	3.75 m wide Road (500 m length)	Sq.m	356			
(b)	5.5 m wide Road (125 m length)	Sq.m	1540			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
2.3.26	Chain link Fence for Switchyards as per technical specification and approved drawing including Fence and poles but excluding concrete which shall be paid seperately under respective items of BPS					
(a)	For 132 kV switchyard	R-m	340			
(b)	For 33 kV switchyard	R-m	250			
2.3.27	Switchyard Gate as per technical specification and approved drawing excluding concrete which shall be paid seperately under respective items of BPS	Nos.	2			
2.3.28	All civil works for construction of drains including excavation as per technical specification and approved drawing but excluding concrete and PCC works which shall be paid seperately under respective items of BPS					
(a)	Type AA (300mm wide x depth up to 600mm)	R-m	335			
(b)	Type BB (450 wide x depth from 600 to 900mm)	R-m	180			
(c)	Type CC (600 wide x depth from 900 to 1200mm)	R-m	135			
2.3.29	Supplying & laying of hume pipe of grade (NP-3) as per technical specification and approved drawing but excluding concrete of bed/support/encasing of hume pipes which shall be paid seperately under respective items of BPS					
(a)	250mm dia	R-m	40			
(b)	300mm dia	R-m	40			
(c)	450mm dia	R-m	20			
(d)	600mm dia	R-m	20			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)				
		Unit	Quantity	Unit Rate	Amount	
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
2.3.30	Supplying and Erecting de-watering pumps as per technical specification and approved drawing					
(a)	5 HP	Nos.	2			
(b)	0.5 HP	Nos.	5			
2.3.31	External water supply as per technical specification from borewell/single point of water supply within substation boundary to Fire Fighting water Tank, Underground tank, Control Room Building and other buildings as applicable including all items like excavation, pipes, fittings, jointings, valves, chambers/manholes etc.					
(a)	80 mm dia. GI Pipe	R-m	200			
(b)	50 mm dia. GI pipe	R-m	150			
(c)	25 mm dia. GI Pipe	R-m	250			
2.3.32	External sewerage system including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc. as per technical specification and approved drawing					
(a)	250 mm dia.	R-m	50			
(b)	150 mm dia.	R-m	100			
2.3.33	Septic tank and soak pit with External sewerage system as per technical specification and approved drawing according to International/British standards including all item such as excavation, piping, pipe fittings, manholes, gali trap, gali chamber etc. complete excluding concrete & reinforcement which shall be measured and paid seperately under respective items of BPS. (At 3 locations for 30 nos. of users each).	Lot	3			

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS
		LC (NPR)		Unit Rate	Amount	
		Unit	Quantity			
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)	
2.3.35	Main Boundary wall Gate (Steel) as per technical specification and approved drawing excluding concrete which shall be paid seperately under respective items of BPS					
(a)	Main Entry Gate for Substation Entrance and exit	Nos.	2			
(b)	Side Entry Gate for Township (Staff Quarters) Buildings	Nos.	1			
2.3.36	Site preparation work for construction of RCC Box culvert of size 6 m length, 5 m width and 2.5 m height in approach road as per technical specification and approved drawings but excluding excavation, PCC, RCC and reinforcement steel which shall be measured and paid seperately under respective items of BPS	LS	1			
2.3.37	Construction of underground Water tank (18000 ltr.) excluding excavation, PCC, RCC and reinforcement steel and fitting of overhead tanks with suction motor for water supply, auto cut off switch, required Upvc pipes and fittings for water supply point to tanks, building and waste pipe etc. and all complete accessories as per specifications & instruction of site engineer.	Lot	2			
<b>2.4</b>	<b>Miscellaneous works as per technical specification</b>					
2.4.1	Identification plate, danger notice etc. (MATERIAL PLUS LABOUR) in Control room cum administrative building, fire fighting, pump house, entrance & exit, switchyard, substation area and approach road	Lot	1			
2.4.2	Installation works of Lightning/Earth mast	Lot	1			
	<b>Sub-total of Part - D of Civil works (MATERIAL PLUS LABOUR) of Nepalgunj AIS Substation</b>					
	<b>Total of Civil and Arichitectural works of Nepalgunj AIS Substation</b>					
	<b>Total of Part- I : 132/33/11 kV AIS Nepalgunj Substation</b>					

## Schedule of Rates and Prices

OCB No. : PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation,Testing and Commissioning of 132 kV Transmission Line and associated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

**Schedule No. 4B(a): Installation, Testing & Commissioning Services and Civil Works**

Item No.	Item Description	Estimated		Construction and Installation (Excluding Taxes)		REMARKS	
		LC (NPR)		Unit Rate	Amount		
		Unit	Quantity				
(1)	(2)	(3)	(4)	(5)	(6)=(4)x(5)		
<b>Part II: Dead-End Tower at New Nepalgunj Substation - 2 Nos.</b>							
<b>1</b>	<b>132 kV DD Type TOWER PARTS (132 kV Double Circuit BEAR Tower) - 2 Nos.</b>						
1.1	Erection of 1 No. of DD type tower & tower extension parts complete with step bolts, hangers, D-shackles, bolts & nuts etc, tack welding and supply and application of enamel & zinc rich paint etc.	Nos.	2				
<b>2</b>	<b>Work associated with construction of tower foundations including stub setting</b>						
2.1	Excavation in all Type and nature of Soil	Cu.m	1000				
<b>3</b>	<b>Concreting (including all associated works related to foundation)</b>						
3.1	M20 Concrete Nominal mix 1:1.5:3	Cu.m	120				
3.2	M10 Concrete Nominal mix 1:3:6	Cu.m	30				
4	Supply and placement of Reinforcement Steel	MT	4				
5	Pipe Type earthing complete with pipe, flat, salt, sand & charcoal	Set	2				
6	Stringing of ACSR BEAR conductor upto dead end tower including armour rod, hardware fittings, insulators etc (single wire)	Km.	0.5				
	<b>Total of Part II : Dead-End Tower at New Nepalgunj Substation</b>						
	<b>Total of Schedule- 4B(a)</b>						

## Schedule of Rates and Prices

## NEPAL ELECTRICITY AUTHORITY

Project Management Directorate

## Kohalpur-Nepalgunj 132 kV Transmission Line Project

Electricity Grid Modernization Project - Additional Financing

PMD/EGMPAF/KNTLP-079/80-01:Design, Supply, Installation, Testing and Commissioning of 132/33/11 kV Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District(Package A-3)

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

## (b): Training Charges for training to be imparted to Employer's Personnel by Bidder's Instructor in 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		Remarks	
						Charges (FC)	Total Training Charges (FC)		
1	2	3	4	5	6	7	8 = 5 x 7		
a)	Training to Owners personnel on Design, testing and Maintenance aspect as per Section Project, Technical Specification at manufacturer's works	i) Substation Control & Protection and Substation Automation System		3	5 days				
		ii) Teleprotection & Communication Equipment (SDH, MUX & NMS (Craft Terminal)) and Visual Monitoring System		3	5 days				
		iii) Transformer and Substation/Switchyard equipments		3	5 days				
	Total for Training Charges								
<b><u>Total of Schedule- 4B(b)</u></b>									

## REMARKS:

1. Training at Manufacturer's works: The Bidder/Contractor shall include in the training charges payment of per Diem allowance to Employer's Personnel (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.

## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01: Design, Supply, Installation, Testing and Commissioning of 132/33/11 kV Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 4B: 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		Remarks
					Unit rate (LC)	Total Training Charges (LC)	
1	2	3	4	5	6	7 = 4x 6	
a)	<b>On Job training on operation, maintenance and testing &amp; commissioning aspect at one Location in Nepal as per section Project, Technical Specification</b>	i) Substation Control & Protection	5	LC			
		ii) Substation Automation System including integration aspect of existing SCADA (of Siemens supplied SINAUT Spectrum Software) at Load Dispatch Center	5	LC			
		iii) Teleprotection & Communication Equipment (SDH, MUX & NMS (Craft Terminal))	5	LC			
		iv) Transformer and Substation/Switchyard equipments	5	LC			
		v) Fire Protection System and and Visual Monitoring System	3	LC			
		vi) Power Substation Design Course (Parameter and physical layout for 132, 220, 400KV etc.) for 5 person	10	LC			
<b>Total for Training Charges</b>							
<b>Total of Schedule- 4B (c)</b>							
<b>REMARKS:</b>							
2. On Job Training in Nepal: The traveling and living expenses of Employer's personnel for the training programme conducted in Nepal shall be borne by the Employer (Owner).							

## Schedule of Rates and Prices

## NEPAL ELECTRICITY AUTHORITY

Project Management Directorate

## Kohalpur-Nepalgunj 132 kV Transmission Line Project

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01: Design, Supply, Installation, Testing and Commissioning of 132/33/11 kV Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 4B : Installation and Other Services (Common for all)****(d): Maintenance Charges**

Sl No	Description	Unit	Qty.	Total Maintenance Charges			Remarks
				Currency	Unit Rate (LC)	Total Maintenance Charges (LC)	
	1	2	3	4		5	
1	Maintenance Charges for Teleprotection & Communication Equipments including SDH & MUX for Five (5) years after Warranty period	Year	5	LC			
	<i>Total Maintenance Charges for Communication Equipment Package (Total Schedule- 4d)</i>						
	<u>Total of Schedule- 4B(d)</u>						



## Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

PMD/EGMPAF/KNTLP-079/80-01: Design, Supply, Installation, Testing and Commissioning of 132/33/11 kV Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)

**Schedule No. 5B: Grand Summary**

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

Schedule of Rates and Prices

**NEPAL ELECTRICITY AUTHORITY**  
 Project Management Directorate  
**Kohalpur-Nepalgunj 132 kV Transmission Line Project**

**Electricity Grid Modernization Project - Additional Financing**

**PMD/EGMPAF/KNTLP079/80-01:Design, Supply, Installation,Testing and Commissioning of 132/33/11 kV Air Insulated Substation at Bakaspur, Janaki Rural Municipality, Banke District (Package A-3)**

Schedule No. 6B: 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