

# **POWER GRID COMPANY OF BANGLADESH LIMITED**

## **National Power Transmission Network Development Project**

### **BIDDING DOCUMENT FOR PLANT DESIGN, SUPPLY AND INSTALLATION OF**

**PACKAGE 10:  
132KV TRANSMISSION LINES MADARIPUR-SHARIATPUR,  
FENI-COMILLA(N) IN-OUT TO CHOWDDAGRAM,  
JESSOR-BENAPOLE AND  
RAJSHAHI-CHAPAINAWABGANJ IN-OUT TO RAHSHAHI 2  
ON TURNKEY BASIS**

#### **SCHEDULE A**

**NOT USED**

# **POWER GRID COMPANY OF BANGLADESH LIMITED**

## **National Power Transmission Network Development Project**

### **BIDDING DOCUMENT FOR PLANT DESIGN, SUPPLY AND INSTALLATION OF**

**PACKAGE 10:  
132KV TRANSMISSION LINES MADARIPUR-SHARIATPUR,  
FENI-COMILLA(N) IN-OUT TO CHOWDDAGRAM,  
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ON TURNKEY BASIS**

### **SCHEDULE B**

Schedules of Prices are given in the next pages. Bidders are requested to go through the relevant ITB Clauses carefully, mentioned in the section -1, to fill in the Price Schedules.

Section IV. Bidding Form

## Schedules of Rates and Prices (Package-10)

### Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad

#### (A) 132kV Transmission Line Madaripur - Shariatpur

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup> (1) x (3)
					(2)	CIP (3)	
<b>A1</b>	<b>Towers</b>						
	Fabrication, galvanising and supply of various types of towers, its body / leg (equal & unequal) extensions (complete) including stubs and bolts & nuts, including hangers, D-shackles, pack washer, spring washer, plain washer, tower earthing, anti-theft nuts & bolts, danger plate, number plate, bird guards, anti-climbing device, step bolt, rest platform (if required), ladder (if required) etc. as per specification (payment shall be released for identified complete tower)						
<b>A1.1</b>	<b>Tower Type 1DL</b>						
A1.1.1	Tower type 1DL Standard		each	7			
A1.1.2	Tower type 1DL E1.5		each	14			
A1.1.3	Tower type 1DL E3.0		each	12			
A1.1.4	Tower type 1DL E4.5		each	13			
A1.1.5	Tower type 1DL E6.0		each	5			
A1.1.6	Tower type 1DL E9.0		each	2			
<b>A1.2</b>	<b>Tower Type 1D1</b>						
A1.2.1	Tower type 1D1 Standard		each	1			
A1.2.2	Tower type 1D1 E1.5		each	1			
A1.2.3	Tower type 1D1 E3.0		each	1			
A1.2.4	Tower type 1D1 E4.5		each	2			
A1.2.5	Tower type 1D1 E6.0		each	1			
A1.2.6	Tower type 1D1 E9.0		each	1			
A1.2.7	Tower type 1D1 E12.0		each	1			
A1.2.8	Tower type 1D1 E15.0		each				
<b>A1.3</b>	<b>Tower Type 1D25</b>						
A1.3.1	Tower type 1D25 Standard		each	1			
A1.3.2	Tower type 1D25 E1.5		each	1			
A1.3.3	Tower type 1D25 E3.0		each	2			
A1.3.4	Tower type 1D25 E4.5		each	2			
A1.3.5	Tower type 1D25 E6.0		each	1			
A1.3.6	Tower type 1D25 E9.0		each	1			
<b>A1.4</b>	<b>Tower Type 1DT6</b>						
A1.4.1	Tower type 1DT6 Standard		each				
A1.4.2	Tower type 1DT6 E1.5		each	1			
A1.4.3	Tower type 1DT6 E3.0		each	1			
A1.4.4	Tower type 1DT6 E4.5		each	1			
A1.4.5	Tower type 1DT6 E6.0		each	2			
A1.4.6	Tower type 1DT6 E9.0		each				
A1.4.7	Auxiliary crossarm for tower type 1DT6		per set of three	1			
<b>A1.5</b>	<b>Additional galvanized tower steel</b>						
A1.5.1	Fabricated		tonne	1			
A1.5.2	Non-fabricated		tonne	3			

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup> (1) x (3)
					(2)	CIP (3)	
<b>A2.</b>	<b>Supply of insulator and fittings:</b>						
<b>A2.1</b>	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn etc.						
A2.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly		each	318			
A2.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly		each	42			
A2.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly		each	144			
A2.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly		each	12			
A2.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly		each	12			
A2.1.6	132kV 70kN Jumper suspension insulator string for ACSR Grosbeak, complete assembly		each	21			
A2.1.7	Vibration damper for ACSR Grosbeak		each	1728			
A2.1.8	Suspension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
A2.1.9	Tension set for 7x3.25mm GSW earthwire, complete		each	-			
A2.1.10	Vibration damper for 7x3.25mm GSW earthwire		each	-			
A2.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly		each	60			
A2.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly		each	32			
A2.1.13	Vibration damper for 7x3.25mm S earthwire equivalent		each	288			
<b>A3</b>	<b>Supply phase conductor, earthwire and OPGW</b>						
A3.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.		route-km	23			
A3.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.		route-km	-			
A3.3	7x3.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.		route-km	23			
<b>A4</b>	<b>Spares</b>						
<b>A4.1</b>	<b>Towers</b>						
	Supply of towers complete with all stubs, nuts, bolts, locking bolt/washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, etc.						
A4.1.1	Tower Type 1DL E1.5		each	1			
A4.1.2	Tower Type 1DL E3.0		each	1			
A4.1.3	Tower Type 1D25 E4.5		each	1			
A4.1.4	Tower Type 1DL E6.0		each	1			
A4.1.5	Tower Type 1DL E9.0		each	1			
A4.1.6	Tower Type 1D25 E6.0		each	1			
A4.1.7	Tower Type 1D25 E9.0		each	1			
A4.1.8	Tower Type 1DT6 E6.0		each	1			
A4.1.9	Tower Type 1DT6 E9.0		each	1			
<b>A4.2</b>	<b>Phase conductor, Earthwire and OPGW</b>						
A4.2.1	Phase conductor ACSR Grosbeak		km	10			
A4.2.3	Earthwire 7/3.25mm Steel		km	-			
A4.2.4	OPGW (7/3.25mm Steel earthwire equivalent)		km	1			
A4.2.5	Mid-span joint for phase ACSR Grosbeak		each	10			
A4.2.6	Repair Sleeve for Phase ACSR Grosbeak		each	10			

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**  
**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup> (1) x (3)
					(2)	CIP (3)	

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup> (1) x (3)
					(2)	CIP (3)	
<b>A4.3</b>	<b>Insulator &amp; fittings</b>						
A4.3.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly, without insulator discs		each	28			
A4.3.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly without insulator discs		each	5			
A4.3.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly, without insulator discs		each	15			
A4.3.4	70kN insulator units		each	280			
A4.3.5	120kN insulator units		each	215			
A4.3.6	Suspension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
A4.3.7	Tension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
A4.3.8	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly		each	5			
A4.3.9	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly		each	4			
A4.3.10	Vibration damper for ACSR Grosbeak		each	40			
A4.3.11	Vibration damper for 7x3.25mm GSW earthwire		each	0			
A4.3.12	Vibration damper for 7x3.25 mm earthwire equivalent		each	10			
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							

Name of Bidder \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

<sup>1</sup> Bidder shall enter a code representing the country of origin of all imported plant and equipment.

<sup>2</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid. Create and use as many columns for Unit Price and Total Price as there are currencies.

**Country of Origin Declaration Form**

Item	Description	Code	Country

**Schedules of Rates and Prices (Package-10)****Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad****(B) 132kV Feni- Comilla (N) Transmission Line IN-OUT to Chowddagram**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup>
					(2)	CIP (3)	(1) x (3)
<b>B1</b>	<b>Towers</b>						
	Fabrication, galvanising and supply of various types of towers, its body / leg (equal & unequal) extensions (complete) including stubs and bolts & nuts, including hangers, D-shackles, pack washer, spring washer, plain washer, tower earthing, anti-theft nuts & bolts, danger plate, number plate, bird guards, anti-climbing device, step bolt, rest platform (if required), ladder (if required) etc. as per specification (payment shall be released for identified complete tower)						
<b>B1.1</b>	<b>Tower Type 1DT6</b>						
B1.1.1	Tower type 1DT6 Standard		each	2			
B1.1.2	Tower type 1DT6 E1.5		each				
B1.1.3	Tower type 1DT6 E3.0		each	2			
B1.1.4	Tower type 1DT6 E4.5		each	2			
B1.1.5	Tower type 1DT6 E9.0		each				
B1.1.6	Auxiliary crossarm for tower type 1DT6		per set of three	6			
<b>B1.2</b>	<b>132kV Gantry Steel Structure</b>						
B1.2.1	132kV gantry structure of 12m height and 22m width without eathiwre peak which will be constructed under the exisiting 230kV transmission line in order that 132kV double circuit transmission line will cross with the 230kV line for forming IN-Out arrangement of Feni-Commilla (N)		set	2			
<b>B1.4</b>	<b>Additional galvanized tower steel</b>						
B1.4.1	Fabricated		tonne	-			
B1.4.2	Non-fabricated		tonne	-			
<b>B2.</b>	<b>Supply of insulator and fittings:</b>						
<b>B2.1</b>	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn etc.						
B2.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly		each				
B2.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly		each				
B2.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly		each	36			
B2.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly		each	36			
B2.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly		each	36			
B2.1.6	132kV Jumper suspension insulator string for ACSR Grosbeak, complete assembly		each	66			
B2.1.7	Vibration damper for ACSR Grosbeak		each	72			
B2.1.8	Suspension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
B2.1.9	Tension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
B2.1.10	Vibration damper for 7x3.25mm GSW earthwire		each	-			
B2.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly		each	-			
B2.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly		each	22			
B2.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW		each	12			

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**

**(B) 132kV Feni- Comilla (N) Transmission Line IN-OUT to Chowddagram**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup> (1) x (3)
					(2)	CIP (3)	
<b>B3</b>	<b>Supply phase conductor, earthwire and OPGW</b>						
B3.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.		route-km	0.9			
B3.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.		route-km	-			
B3.3	7x43.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, <b>two</b> OPGW earthwire on the line.		route-km	0.9			
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							

Name of Bidder \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

<sup>1</sup> Bidder shall enter a code representing the country of origin of all imported plant and equipment.

<sup>2</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid. Create and use as many columns for Unit Price and Total Price as there are currencies.

**Country of Origin Declaration Form**

Item	Description	Code	Country



## Section IV. Bidding Form

**Schedules of Rates and Prices (Package-10)****Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad****(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup> (1) x (3)
					(2)	CIP (3)	
C1	Towers						
	Fabrication, galvanising and supply of various types of towers, its body / leg (equal & unequal) extensions (complete) including stubs and bolts & nuts, including hangers, D-shackles, pack washer, spring washer, plain washer, tower earthing, anti-theft nuts & bolts, danger plate, number plate, bird guards, anti-climbing device, step bolt, rest platform (if required), ladder (if required) etc. as per specification (payment shall be released for identified complete tower)						
C1.1	Tower Type 1DL						
C1.1.1	Tower type 1DL Standard		each	13			
C1.1.2	Tower type 1DL E1.5		each	20			
C1.1.3	Tower type 1DL E3.0		each	12			
C1.1.4	Tower type 1DL E4.5		each	20			
C1.1.5	Tower type 1DL E6.0		each	8			
C1.1.6	Tower type 1DL E9.0		each	3			
C1.2	Tower Type 1D1						
C1.2.1	Tower type 1D1 Standard		each				
C1.2.2	Tower type 1D1 E1.5		each				
C1.2.3	Tower type 1D1 E3.0		each	1			
C1.2.4	Tower type 1D1 E4.5		each	2			
C1.2.5	Tower type 1D1 E6.0		each	2			
C1.2.6	Tower type 1D1 E9.0		each	1			
C1.2.7	Tower type 1D1 E12.0		each				
C1.2.8	Tower type 1D1 E15.0		each				
C1.3	Tower Type 1D25						
C1.3.1	Tower type 1D25 Standard		each	2			
C1.3.2	Tower type 1D25 E1.5		each				
C1.3.3	Tower type 1D25 E3.0		each	2			
C1.3.4	Tower type 1D25 E4.5		each	2			
C1.3.5	Tower type 1D25 E6.0		each	2			
C1.3.6	Tower type 1D25 E9.0		each				
C1.4	Tower Type 1DT6						
C1.4.1	Tower type 1DT6 Standard		each	1			
C1.4.2	Tower type 1DT6 E1.5		each	2			
C1.4.3	Tower type 1DT6 E3.0		each	3			
C1.4.4	Tower type 1DT6 E4.5		each	3			
C1.4.5	Tower type 1DT6 E6.0		each	1			
C1.4.6	Tower type 1DT6 E9.0		each	1			
C1.4.7	Auxiliary crossarm for tower type 1DT6		per set of three	0			
C1.5	Additional galvanized tower steel						
C1.5.1	Fabricated		tonne	2			
C1.5.2	Non-fabricated		tonne	5			

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup> (1) x (3)
					(2)	CIP (3)	
<b>C2.</b>	<b>Supply of insulator and fittings:</b>						
<b>C2.1</b>	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn etc.						
C2.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly		each	456			
C2.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly		each	36			
C2.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly		each	204			
C2.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly		each	12			
C2.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly		each	12			
C2.1.6	132kV 70kN Jumper suspension insulator string for ACSR Grosbeak, complete assembly		each	33			
C2.1.7	Vibration damper for ACSR Grosbeak		each	2376			
C2.1.8	Suspension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
C2.1.9	Tension set for 7x3.25mm GSW earthwire, complete		each	-			
C2.1.10	Vibration damper for 7x3.25mm GSW earthwire		each	-			
C2.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly		each	82			
C2.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly		each	44			
C2.1.13	Vibration damper for 7x3.25mm S earthwire equivalent		each	360			
<b>C3</b>	<b>Supply phase conductor, earthwire and OPGW</b>						
C3.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.		route-km	30			
C3.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.		route-km	-			
C3.3	7x3.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.		route-km	30			
<b>C4</b>	<b>Spares</b>						
<b>C4.1</b>	<b>Towers</b>						
	Supply of towers complete with all stubs, nuts, bolts, locking bolt/washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, etc.						
C4.1.1	Tower Type 1DL E1.5		each	1			
C4.1.2	Tower Type 1DL E3.0		each	1			
C4.1.3	Tower Type 1D25 E4.5		each	1			
C4.1.4	Tower Type 1DL E6.0		each	1			
C4.1.5	Tower Type 1DL E9.0		each	1			
C4.1.6	Tower Type 1D25 E6.0		each	1			
C4.1.7	Tower Type 1D25 E9.0		each	1			
C4.1.8	Tower Type 1DT6 E6.0		each	1			
C4.1.9	Tower Type 1DT6 E9.0		each	1			
<b>C4.2</b>	<b>Phase conductor, Earthwire and OPGW</b>						
C4.2.1	Phase conductor ACSR Grosbeak		km	10			
C4.2.3	Earthwire 7/3.25mm Steel		km	-			
C4.2.4	OPGW (7/3.25mm Steel earthwire equivalent)		km	1			
C4.2.5	Mid-span joint for phase ACSR Grosbeak		each	10			
C4.2.6	Repair Sleeve for Phase ACSR Grosbeak		each	10			

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup>
					(2)	CIP (3)	(1) x (3)

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup>
					(2)	CIP (3)	(1) x (3)
<b>C4.3</b>	<b>Insulator &amp; fittings</b>						
C4.3.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly, without insulator discs		each	28			
C4.3.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly without insulator discs		each	5			
C4.3.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly, without insulator discs		each	15			
C4.3.4	70kN insulator units		each	280			
C4.3.5	120kN insulator units		each	215			
C4.3.6	Suspension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
C4.3.7	Tension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
C4.3.8	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly		each	5			
C4.3.9	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly		each	4			
C4.3.10	Vibration damper for ACSR Grosbeak		each	40			
C4.3.11	Vibration damper for 7x3.25mm GSW earthwire		each	0			
C4.3.12	Vibration damper for 7x3.25 mm earthwire equivalent		each	10			
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							

Name of Bidder \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

<sup>1</sup> Bidder shall enter a code representing the country of origin of all imported plant and equipment.

<sup>2</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid. Create and use as many columns for Unit Price and Total Price as there are currencies.

**Country of Origin Declaration Form**

Item	Description	Code	Country

**Schedules of Rates and Prices (Package-10)****Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad****(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup>
					(2)	CIP (3)	(1) x (3)
<b>D1</b>	<b>Towers</b>						
	Fabrication, galvanising and supply of various types of towers, its body / leg (equal & unequal) extensions (complete) including stubs and bolts & nuts, including hangers, D-shackles, pack washer, spring washer, plain washer, tower earthing, anti-theft nuts & bolts, danger plate, number plate, bird guards, anti-climbing device, step bolt, rest platform (if required), ladder (if required) etc. as per specification (payment shall be released for identified complete tower)						
<b>D1.1</b>	<b>Tower Type 1DT6</b>						
D1.1.1	Tower type 1DT6 Standard		each	0			
D1.1.2	Tower type 1DT6 E1.5		each	0			
D1.1.3	Tower type 1DT6 E3.0		each	0			
D1.1.4	Tower type 1DT6 E4.5		each	1			
D1.1.5	Tower type 1DT6 E6.0		each	1			
D1.1.6	Auxiliary crossarm for tower type 1DT6		per set of three	2			
<b>D1.2</b>	<b>Tower Type 1QT6</b>						
D1.2.1	Tower type 1QT6 Standard		each	-			
D1.2.2	Tower type 1QT6 E1.5		each	-			
D1.2.3	Tower type 1QT6 E3.0		each	2			
D1.2.4	Tower type 1QT6 E4.5		each	1			
D1.2.5	Tower type 1QT6 E6.0		each	-			
D1.2.6	Tower type 1QT6 E9.0		each	-			
D1.2.1	Auxiliary crossarm for tower type 1QT6		per set of three	2			
<b>D1.3</b>	<b>Additional galvanized tower steel</b>						
D1.3.1	Fabricated		tonne	-			
D1.3.2	Non-fabricated		tonne	-			
<b>D2.</b>	<b>Supply of insulator and fittings:</b>						
<b>D2.1</b>	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn etc.						
D2.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly		each	-			
D2.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly		each	-			
D2.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly		each	84			
D2.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly		each	12			
D2.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly		each	12			
D2.1.6	132kV 70kN jumper suspension insulator string for ACSR Grosbeak, complete assembly		each	48			
D2.1.7	Vibration damper for ACSR Grosbeak		each	98			
D2.1.8	Suspension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
D2.1.9	Tension set for 7x3.25mm GSW earthwire, complete assembly		each	-			
D2.1.10	Vibration damper for 7x4.00mm GSW earthwire		each	-			
D2.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly		each	-			

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup>
					(2)	CIP (3)	(1) x (3)
D2.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly		each	12			
D2.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW		each	12			h

Section IV. Bidding Form

**Schedule No. 1. Plant and Mandatory Spare Parts Supplied from Abroad**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Code <sup>1</sup>	Unit	Qty. (1)	Unit Price <sup>2</sup>		Total Price <sup>2</sup>
					(2)	CIP (3)	(1) x (3)
<b>D3</b>	<b>Supply phase conductor, earthwire and OPGW</b>						
D3.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.		route-km	1.1			
D3.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.		route-km	-			
D3.3	7x43.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.		route-km	1.1			
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							

Name of Bidder \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

<sup>1</sup> Bidder shall enter a code representing the country of origin of all imported plant and equipment.

<sup>2</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid. Create and use as many columns for Unit Price and Total Price as there are currencies.

**Country of Origin Declaration Form**

Item	Description	Code	Country

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
				(2)	(1)x(2)
<b>A1</b>	<b>Towers</b>				
	Fabrication, galvanising and supply of various types of towers, its body / leg (equal & unequal) extensions (complete) including stubs and bolts & nuts, including hangers, D-shackles, pack washer, spring washer, plain washer, tower earthing, anti-theft nuts & bolts, danger plate, number plate, bird guards, anti-climbing device, step bolt, rest platform (if required), ladder (if required) etc. as per specification (payment shall be released for identified complete tower)				
<b>A1.1</b>	<b>Tower Type 1DL</b>				
A1.1.1	Tower type 1DL Standard	each	7		
A1.1.2	Tower type 1DL E1.5	each	14		
A1.1.3	Tower type 1DL E3.0	each	12		
A1.1.4	Tower type 1DL E4.5	each	13		
A1.1.5	Tower type 1DL E6.0	each	5		
A1.1.6	Tower type 1DL E9.0	each	2		
<b>A1.2</b>	<b>Tower Type 1D1</b>				
A1.2.1	Tower type 1D1 Standard	each	1		
A1.2.2	Tower type 1D1 E1.5	each	1		
A1.2.3	Tower type 1D1 E3.0	each	1		
A1.2.4	Tower type 1D1 E4.5	each	2		
A1.2.5	Tower type 1D1 E6.0	each	1		
A1.2.6	Tower type 1D1 E9.0	each	1		
A1.2.7	Tower type 1D1 E12.0	each	1		
A1.2.8	Tower type 1D1 E15.0	each			
<b>A1.3</b>	<b>Tower Type 1D25</b>				
A1.3.1	Tower type 1D25 Standard	each	1		
A1.3.2	Tower type 1D25 E1.5	each	1		
A1.3.3	Tower type 1D25 E3.0	each	2		
A1.3.4	Tower type 1D25 E4.5	each	2		
A1.3.5	Tower type 1D25 E6.0	each	1		
A1.3.6	Tower type 1D25 E9.0	each	1		
<b>A1.4</b>	<b>Tower Type 1DT6</b>				
A1.4.1	Tower type 1DT6 Standard	each			
A1.4.2	Tower type 1DT6 E1.5	each	1		
A1.4.3	Tower type 1DT6 E3.0	each	1		
A1.4.4	Tower type 1DT6 E4.5	each	1		
A1.4.5	Tower type 1DT6 E6.0	each	2		
A1.4.6	Tower type 1DT6 E9.0	each			
A1.4.7	Auxiliary crossarm for tower type 1DT6	per set of three	1		
<b>A1.5</b>	<b>Additional galvanized tower steel</b>				
A1.5.1	Fabricated	tonne	1		
A1.5.2	Non-fabricated	tonne	3		



Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
				(2)	(1)x(2)
<b>A2.</b>	<b>Supply of insulator and fittings:</b>				
<b>A2.1</b>	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn etc.				
A2.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly	each	318		
A2.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly	each	42		
A2.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly	each	144		
A2.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12		
A2.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12		
A2.1.6	132kV 70kN Jumper suspension insulator string for ACSR Grosbeak, complete assembly	each	21		
A2.1.7	Vibration damper for ACSR Grosbeak	each	1728		
A2.1.8	Suspension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
A2.1.9	Tension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
A2.1.10	Vibration damper for 7x3.25mm GSW earthwire	each	-		
A2.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	60		
A2.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	32		
A2.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW	each	288		
<b>A3</b>	<b>Supply phase conductor, earthwire and OPGW</b>				
A3.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.	route-km	23		
A3.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.	route-km	-		
A3.3	7x3.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.	route-km	23		
<b>A4</b>	<b>Spares</b>				
<b>A4.1</b>	<b>Towers</b>				
	Supply of towers complete with all stubs, nuts, bolts, locking bolt/washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, etc.				
A4.1.1	Tower Type 1DL E1.5	each	1		
A4.1.2	Tower Type 1DL E3.0	each	1		
A4.1.3	Tower Type 1D25 E4.5	each	1		
A4.1.4	Tower Type 1DL E6.0	each	1		
A4.1.5	Tower Type 1DL E9.0	each	1		
A4.1.6	Tower Type 1D25 E6.0	each	1		
A4.1.7	Tower Type 1D25 E9.0	each	1		
A4.1.8	Tower Type 1DT6 E6.0	each	1		
A4.1.9	Tower Type 1DT6 E9.0	each	1		

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
				(2)	(1)x(2)
<b>A4.2</b>	<b>Phase conductor, Earthwire and OPGW</b>				
A4.2.1	Phase conductor ACSR Grosbeak	km	10		
A4.2.3	Earthwire 7/3.25mm Steel	km	-		
A4.2.4	OPGW (7/3.25mm Steel earthwire equivalent)	km	1		
A4.2.5	Mid-span joint for phase ACSR Grosbeak	each	10		
A4.2.6	Repair Sleeve for Phase ACSR Grosbeak	each	10		
<b>A4.3</b>	<b>Insulator &amp; fittings</b>				
A4.3.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly, without insulator discs	each	28		
A4.3.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly without insulator discs	each	5		
A4.3.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly, without insulator discs	each	15		
A4.3.4	70kN insulator units	each	280		
A4.3.5	120kN insulator units	each	215		
A4.3.6	Suspension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
A4.3.7	Tension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
A4.3.8	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	5		
A4.3.9	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	4		
A4.3.10	Vibration damper for ACSR Grosbeak	each	40		
A4.3.11	Vibration damper for 7x3.25mm GSW earthwire	each	0		
A4.3.12	Vibration damper for 7x3.25 mm earthwire equivalent OPGW	each	10		
<b>TOTAL (to Schedule No.6. Grand Summary)</b>					
				Name of Bidder _____	
				Signature of Bidder _____	

<sup>c</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(B) 132kV Feni- Comilla (N) Transmission Line IN-OUT to Chowddagram**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
				(2)	(1)x(2)
<b>B1</b>	<b>Towers</b>				
	Fabrication, galvanising and supply of various types of towers, its body / leg (equal & unequal) extensions (complete) including stubs and bolts & nuts, including hangers, D-shackles, pack washer, spring washer, plain washer, tower earthing, anti-theft nuts & bolts, danger plate, number plate, bird guards, anti-climbing device, step bolt, rest platform (if required), ladder (if required) etc. as per specification (payment shall be released for identified complete tower)				
<b>B1.1</b>	<b>Tower Type 1DT6</b>				
B1.1.1	Tower type 1DT6 Standard	each	2		
B1.1.2	Tower type 1DT6 E1.5	each			
B1.1.3	Tower type 1DT6 E3.0	each	2		
B1.1.4	Tower type 1DT6 E4.5	each	2		
B1.1.5	Tower type 1DT6 E9.0	each			
B1.1.6	Auxiliary crossarm for tower type 1DT6	per set of three	6		
<b>B1.2</b>	<b>132kV Gantry Steel Structure</b>				
B1.2.1	132kV gantry structure of 12m height and 22m width without eathwire peak which will be constructed under the exisiting 230kV transmission line in order that 132kV double circuit transmission line will cross with the 230kV line for forming IN-Out arrangement of Feni-Commilla (N) trasnmission line.	set	2		
<b>B1.4</b>	<b>Additional galvanized tower steel</b>				
B1.4.1	Fabricated	tonne	-		
B1.4.2	Non-fabricated	tonne	-		
<b>B2.</b>	<b>Supply of insulator and fittings:</b>				
<b>B2.1</b>	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn etc.				
B2.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly	each			
B2.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly	each			
B2.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly	each	36		
B2.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly	each	36		
B2.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly	each	36		
B2.1.6	132kV Jumper suspension insulator string for ACSR Grosbeak, complete assembly	each	66		
B2.1.7	Vibration damper for ACSR Grosbeak	each	72		
B2.1.8	Suspension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
B2.1.9	Tension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
B2.1.10	Vibration damper for 7x3.25mm GSW earthwire	each	-		

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(B) 132kV Feni- Comilla (N) Transmission Line IN-OUT to Chowddagram**

Item	Description	Unit	Qty.	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
			(1)	(2)	(1)x(2)
B2.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	-		
B2.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	22		
B2.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW	each	12		
<b>B3</b>	<b>Supply phase conductor, earthwire and OPGW</b>				
B3.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.	route-km	0.9		
B3.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.	route-km	-		
B3.3	7x43.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, <b>two</b> OPGW earthwire on the line.	route-km	0.9		
<b>TOTAL (to Schedule No.6. Grand Summary)</b>					
				Name of Bidder _____	
				Signature of Bidder _____	

<sup>c</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
				(2)	(1)x(2)
<b>C1</b>	<b>Towers</b>				
	Fabrication, galvanising and supply of various types of towers, its body / leg (equal & unequal) extensions (complete) including stubs and bolts & nuts, including hangers, D-shackles, pack washer, spring washer, plain washer, tower earthing, anti-theft nuts & bolts, danger plate, number plate, bird guards, anti-climbing device, step bolt, rest platform (if required), ladder (if required) etc. as per specification (payment shall be released for identified complete tower)				
<b>C1.1</b>	<b>Tower Type 1DL</b>				
C1.1.1	Tower type 1DL Standard	each	13	13	
C1.1.2	Tower type 1DL E1.5	each	20		
C1.1.3	Tower type 1DL E3.0	each	12		
C1.1.4	Tower type 1DL E4.5	each	20		
C1.1.5	Tower type 1DL E6.0	each	8		
C1.1.6	Tower type 1DL E9.0	each	3		
<b>C1.2</b>	<b>Tower Type 1D1</b>				
C1.2.1	Tower type 1D1 Standard	each			
C1.2.2	Tower type 1D1 E1.5	each			
C1.2.3	Tower type 1D1 E3.0	each	1		
C1.2.4	Tower type 1D1 E4.5	each	2		
C1.2.5	Tower type 1D1 E6.0	each	2		
C1.2.6	Tower type 1D1 E9.0	each	1		
C1.2.7	Tower type 1D1 E12.0	each			
C1.2.8	Tower type 1D1 E15.0	each			
<b>C1.3</b>	<b>Tower Type 1D25</b>				
C1.3.1	Tower type 1D25 Standard	each	2		
C1.3.2	Tower type 1D25 E1.5	each			
C1.3.3	Tower type 1D25 E3.0	each	2		
C1.3.4	Tower type 1D25 E4.5	each	2		
C1.3.5	Tower type 1D25 E6.0	each	2		
C1.3.6	Tower type 1D25 E9.0	each			
<b>C1.4</b>	<b>Tower Type 1DT6</b>				
C1.4.1	Tower type 1DT6 Standard	each	1		
C1.4.2	Tower type 1DT6 E1.5	each	2		
C1.4.3	Tower type 1DT6 E3.0	each	3		

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
				(2)	(1)x(2)
C1.4.4	Tower type 1DT6 E4.5	each	3		
C1.4.5	Tower type 1DT6 E6.0	each	1		
C1.4.6	Tower type 1DT6 E9.0	each	1		
C1.4.7	Auxiliary crossarm for tower type 1DT6	per set of three	0		
<b>C1.5</b>	<b>Additional galvanized tower steel</b>				
C1.5.1	Fabricated	tonne	2		
C1.5.2	Non-fabricated	tonne	5		
<b>C2.</b>	<b>Supply of insulator and fittings:</b>				
<b>C2.1</b>	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn etc.				
C2.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly	each	456		
C2.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly	each	36		
C2.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly	each	204		
C2.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12		
C2.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12		
C2.1.6	132kV 70kN Jumper suspension insulator string for ACSR Grosbeak, complete assembly	each	33		
C2.1.7	Vibration damper for ACSR Grosbeak	each	2376		
C2.1.8	Suspension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
C2.1.9	Tension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
C2.1.10	Vibration damper for 7x3.25mm GSW earthwire	each	-		
C2.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	82		
C2.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	44		
C2.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW	each	360		
<b>C3</b>	<b>Supply phase conductor, earthwire and OPGW</b>				
C3.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.	route-km	30		
C3.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.	route-km	-		
C3.3	7x3.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.	route-km	30		
<b>C4</b>	<b>Spares</b>				
<b>C4.1</b>	<b>Towers</b>				
	Supply of towers complete with all stubs, nuts, bolts, locking bolt/washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, etc.				
C4.1.1	Tower Type 1DL E1.5	each	1		
C4.1.2	Tower Type 1DL E3.0	each	1		
C4.1.3	Tower Type 1D25 E4.5	each	1		

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
				(2)	(1)x(2)
C4.1.4	TowerType 1DL E6.0	each	1		
C4.1.5	Tower Type 1DL E9.0	each	1		
C4.1.6	Tower Type 1D25 E6.0	each	1		
C4.1.7	TowerType 1D25 E9.0	each	1		
C4.1.8	TowerType 1DT6 E6.0	each	1		
C4.1.9	TowerType 1DT6 E9.0	each	1		
<b>C4.2</b>	<b>Phase conductor, Earthwire and OPGW</b>				
C4.2.1	Phase conductor ACSR Grosbeak	km	10		
C4.2.3	Earthwire 7/3.25mm Steel	km	-		
C4.2.4	OPGW (7/3.25mm Steel earthwire equivalent)	km	1		
C4.2.5	Mid-span joint for phase ACSR Grosbeak	each	10		
C4.2.6	Repair Sleeve for Phase ACSR Grosbeak	each	10		
<b>C4.3</b>	<b>Insulator &amp; fittings</b>				
C4.3.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly, without insulator discs	each	28		
C4.3.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly without insulator discs	each	5		
C4.3.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly, without insulator discs	each	15		
C4.3.4	70kN insulator units	each	280		
C4.3.5	120kN insulator units	each	215		
C4.3.6	Suspension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
C4.3.7	Tension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
C4.3.8	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	5		
C4.3.9	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	4		
C4.3.10	Vibration damper for ACSR Grosbeak	each	40		
C4.3.11	Vibration damper for 7x3.25mm GSW earthwire	each	0		
C4.3.12	Vibration damper for 7x3.25 mm earthwire equivalent OPGW	each	10		
<b>TOTAL (to Schedule No.6. Grand Summary)</b>					

Name of Bidder \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

<sup>c</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Unit	Qty.	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
			(1)	(2)	(1)x(2)
<b>D1</b>	<b>Towers</b>				
	Fabrication, galvanising and supply of various types of towers, its body / leg (equal & unequal) extensions (complete) including stubs and bolts & nuts, including hangers, D-shackles, pack washer, spring washer, plain washer, tower earthing, anti-theft nuts & bolts, danger plate, number plate, bird guards, anti-climbing device, step bolt, rest platform (if required), ladder (if required) etc. as per specification (payment shall be released for identified complete tower)				
<b>D1.1</b>	<b>Tower Type 1DT6</b>				
D1.1.1	Tower type 1DT6 Standard	each	1		
D1.1.2	Tower type 1DT6 E1.5	each	1		
D1.1.3	Tower type 1DT6 E3.0	each	1		
D1.1.4	Tower type 1DT6 E4.5	each	1		
D1.1.5	Tower type 1DT6 E6.0	each	1		
D1.1.6	Auxiliary crossarm for tower type 1DT6	per set of three	2		
<b>D1.2</b>	<b>Tower Type 1QT6</b>				
D1.2.1	Tower type 1QT6 Standard	each	2		
D1.2.2	Tower type 1QT6 E1.5	each	-		
D1.2.3	Tower type 1QT6 E3.0	each	2		
D1.2.4	Tower type 1QT6 E4.5	each	1		
D1.2.5	Tower type 1QT6 E6.0	each	-		
D1.2.6	Tower type 1QT6 E9.0	each	-		
D1.2.1	Auxiliary crossarm for tower type 1QT6	per set of three	2		
<b>D1.3</b>	<b>Additional galvanized tower steel</b>				
D1.3.1	Fabricated	tonne	-		
D1.3.2	Non-fabricated	tonne	-		
<b>D2.</b>	<b>Supply of insulator and fittings:</b>				
<b>D2.1</b>	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn etc.				
D2.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly	each	-		
D2.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly	each	-		
D2.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly	each	84		
D2.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12		
D2.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12		
D2.1.6	132kV 70kN jumper suspension insulator string for ACSR Grosbeak, complete assembly	each	48		
D2.1.7	Vibration damper for ACSR Grosbeak	each	98		
D2.1.8	Suspension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
D2.1.9	Tension set for 7x3.25mm GSW earthwire, complete assembly	each	-		
D2.1.10	Vibration damper for 7x4.00mm GSW earthwire	each	-		
D2.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	-		



Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
				(2)	(1)x(2)
D2.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	12		
D2.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW	each	12		

Section IV. Bidding Form

**Schedule No. 2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country**

**(Package-10)**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Unit	Qty.	Unit Price <sup>1</sup>	Total Price <sup>1</sup>
			(1)	(2)	(1)x(2)
<b>D3</b>	<b>Supply phase conductor, earthwire and OPGW</b>				
D3.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.	route-km	1.1		
D3.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.	route-km	-		
D3.3	7x43.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.	route-km	1.1		
<b>TOTAL (to Schedule No.6. Grand Summary)</b>					
			Name of Bidder _____  Signature of Bidder _____		

<sup>c</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

Section IV. Bidding Form

**Schedule No. 3. Design Services (Package-10)**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign (1) x (2)	Local (1)x(3)
1	Conductor, earthwire and accessories	Lot	1				
2	OPGW & accessories	Lot	1				
3	Insulators and Insulator assemblies	Lot	1				
4	Foundations & other civil engineering related to overhead transmission line	Lot	1				
5	132kV gantry steel structures	Lot	1				
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							

Note: All other design costs shall deem to be included in the above items.

<p>Name of Bidder _____</p> <p>Signature of Bidder _____</p>
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<sup>1</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>A1</b>	<b>Route Survey &amp; Clearance</b>						
A1.1	Profile Survey in accordance with the requirements of the technical specification, incl. full ground survey with change of route, if any, tower plotting and preparation and submission of route maps, mouza maps profile drawings, SIMM document, etc.	km	23				
A1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	km	23				
<b>A2</b>	<b>Geotechnical Investigation</b>						
A2.1	Geotechnical Investigation in accordance with the requirements of the Technical Specification						
(a)	Level 2	borehole	-				
(b)	Level 3	borehole	-				
(c)	Level 4	borehole	40				
<b>A3</b>	<b>Foundations</b>						
	Foundations for towers including all setting out, Concrete, Reinforcement, Excavation, Pumping, Stub-cutting, Geotechnical Investigation (Level 3), Shuttering, Leveling, Timbering, supply & Installation of foundation steelwork, Earthing Materials, Backfilling, approved Protective Coating & site clearing etc.						
<b>A3.1</b>	<b>Tower Type 1DL</b>						
A3.1.1	Soil category-2	tower	-				
A3.1.2	Soil category-3	tower	20				
A3.1.3	Soil category-4	tower	33				
<b>A3.2</b>	<b>Tower Type 1D1</b>						
A3.2.1	Soil category-2	tower	-				
A3.2.2	Soil category-3	tower	3				
A3.2.3	Soil category-4	tower	4				
<b>A3.3</b>	<b>Tower Type 1D25</b>						
A3.3.1	Soil category-2	tower	-				
A3.3.2	Soil category-3	tower	4				
A3.3.3	Soil category-4	tower	4				
<b>A3.4</b>	<b>Tower Type 1DT6</b>						
A3.4.1	Soil category-2	tower	-				
A3.4.2	Soil category-3	tower	2				
A3.4.3	Soil category-4	tower	3				
<b>A4</b>	<b>Testing of Foundations</b>						
A4.1	Supply (incl. Foundation, steel works), install and test foundation to prove compliance with Technical specification, payment for successful test only: Uplift test for pad & chimney type foundation for tower type 1DL	tower	1				
A4.2	Individual Pile test including supply, install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):						
(a)	Compression Type test	per test	2				
(b)	Uplift Type test	per test	2				
(c)	Pile Integrity Test	per test	700				

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>A5</b>	<b>Towers</b>						
	Erection of towers complete with all stubs, nuts, bolts, locking bolt/washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, etc.						
<b>A5.1</b>	<b>Tower Type 1DL</b>						
A5.1.1	Tower type 1DL Standard	each	7				
A5.1.2	Tower type 1DL E1.5	each	14				
A5.1.3	Tower type 1DL E3.0	each	12				
A5.1.4	Tower type 1DL E4.5	each	13				
A5.1.5	Tower type 1DL E6.0	each	5				
A5.1.6	Tower type 1DL E9.0	each	2				
<b>A5.2</b>	<b>Tower Type 1D1</b>						
A5.2.1	Tower type 1D1 Standard	each	1				
A5.2.2	Tower type 1D1 E1.5	each	1				
A5.2.3	Tower type 1D1 E3.0	each	1				
A5.2.4	Tower type 1D1 E4.5	each	2				
A5.2.5	Tower type 1D1 E6.0	each	1				
A5.2.6	Tower type 1D1 E9.0	each	1				
A5.2.7	Tower type 1D1 E12.0	each	1				
A5.2.8	Tower type 1D1 E15.0	each					
<b>51.3</b>	<b>Tower Type 1D25</b>						
A5.3.1	Tower type 1D25 Standard	each	1				
A5.3.2	Tower type 1D25 E1.5	each	1				
A5.3.3	Tower type 1D25 E3.0	each	2				
A5.3.4	Tower type 1D25 E4.5	each	2				
A5.3.5	Tower type 1D25 E6.0	each	1				
A5.3.6	Tower type 1D25 E9.0	each	1				
<b>A5.4</b>	<b>Tower Type 1DT6</b>						
A5.4.1	Tower type 1DT6 Standard	each					
A5.4.2	Tower type 1DT6 E1.5	each	1				
A5.4.3	Tower type 1DT6 E3.0	each	1				
A5.4.4	Tower type 1DT6 E4.5	each	1				
A5.4.5	Tower type 1DT6 E6.0	each	2				
A5.4.6	Tower type 1DT6 E9.0	each					
A5.4.7	Auxiliary crossarm for tower type 1DT6	per set of three	1				
<b>A5.5</b>	<b>Additional galvanized tower steel</b>	each					
A5.5.1	Fabricated	each	2				
A5.5.2	Non-fabricated	each	5				
<b>A5.6</b>	<b>Tower Test</b>						
A5.6.1	Proto assembly of all type towers with all extensions to prove compliance with specification. Payment for successful test only. ( * )						
(a)	Tower type 1DL	each	1				
(b)	Tower type 1D1	each	1				
(c)	Tower type 1D25	each	1				
(d)	Tower type 1DT6	each	1				

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>A6</b>	<b>Erection of insulator and fittings:</b>						
	Erection of Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods arcing horn etc.						
A6.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly	each	318				
A6.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly	each	42				
A6.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly	each	144				
A6.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12				
A6.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12				
A6.1.6	132kV 70kN Jumper uspension insulator string for ACSR Grosbeak, complete assembly	each	21				
A6.1.7	Vibration damper for ACSR Grosbeak	each	1728				
A6.1.8	Suspension set for 7x3.25mm GSW earthwire	each	-				
A6.1.9	Tension set for 7x3.25mm GSW earthwire	each	-				
A6.1.10	Vibration damper for 7x4.00mm GSW earthwire	each	-				
A6.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	60				
A6.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	32				
A6.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW	each	288				
<b>A7</b>	<b>Erection of phase conductor, earthwire and OPGW</b>						
A7.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.	route-km	23				
A7.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the	route-km	-				
A7.3	7x43.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.	route-km	23				
A7.4	Erection of single downleads (ACSR Grosbeak) including dropdown from terminal tower to sub-station gantry	set of three	4				
A7.5	Erection of earthwire connection from terminal tower to substation gantry	per wire	-				
A7.6	Erection of OPGW connection from terminal tower to substation Gantry/Mast	per wire	4				
<b>A8</b>	<b>Miscellaneous</b>						
A8.1	Additional counterpoise earthing in accordance with requirement of the Technical specification	per meter	200				
A8.2	Miscellaneous Rates for works certified by the Engineer in accordance with method of Payment						
(a)	Additional Excavation	m <sup>3</sup>	100				
(b)	Additional Concrete	m <sup>3</sup>	100				
(c)	Additional Reinforcement	kg	100				
(d)	Extra for surface resisting cement per cu.m of concrete	m <sup>3</sup>	25				
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							

Name of Bidder

Signature of Bidder

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(A) 132kV Transmission Line Madaripur - Shariatpur**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)

<sup>1</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(B) 132kV Feni- Comilla (N) Transmission Line IN-OUT to Chowddagram**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>B1</b>	<b>Route Survey &amp; Clearance</b>						
B1.1	Profile Survey in accordance with the requirements of the technical specification, incl. full ground survey with change of route, if any, tower plotting and preparation and submission of route maps, mouza maps profile drawings, SIMM document, etc.	km	0.9				
B1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	km	0.9				
<b>B2</b>	<b>Geotechnical Investigation</b>						
B2.1	Geotechnical Investigation in accordance with the requirements of the Technical Specification						
(a)	Level 2	borehole	-				
(b)	Level 3	borehole	-				
(c)	Level 4	borehole	5				
<b>B3</b>	<b>Foundations</b>						
	Foundations for towers including all setting out, Concrete, Reinforcement, Excavation, Pumping, Stub-cutting, Geotechnical Investigation (Level 3), Shuttering, Leveling, Timbering, supply & Installation of foundation steelwork, Earthing Materials, Backfilling, approved Protective Coating & site clearing etc.						
<b>B3.1</b>	<b>Tower Type 1DT6</b>						
B3.1.1	Soil category-2	tower	-				
B3.1.2	Soil category-3	tower	3				
B3.1.3	Soil category-4	tower	3				
<b>B3.2</b>	<b>132kV Gantry Steel Structure</b>						
B3.2.1	Soil category-2	tower	-				
B3.2.2	Soil category-3	tower					
B3.2.3	Soil category-4	tower	2				
<b>B4</b>	<b>Testing of Foundations</b>						
B4.1	Supply (incl. Foundation, steel works), install and test foundation to prove compliance with Technical specification, payment for successful test only: Uplift test for pad & chimney type foundation for tower type 1DT						
B4.2	Individual Pile test including supply, install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):						
(a)	Compression Type test	per test	-				
(b)	Uplift Type test	per test	-				
(c)	Pile Integrity Test	per test	100				



Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(B) 132kV Feni- Comilla (N) Transmission Line IN-OUT to Chowddagram**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>B5</b>	<b>Towers</b>						
	Erection of towers complete with all stubs, nuts, bolts, locking bolt/washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, etc.						
<b>B5.1</b>	<b>Tower Type 1DT6</b>						
B5.1.1	Tower type 1DT6 Standard	each	2				
B5.1.2	Tower type 1DT6 E1.5	each	-				
B5.1.3	Tower type 1DT6 E3.0	each	2				
B5.1.4	Tower type 1DT6 E4.5	each	2				
B5.1.5	Tower type 1DT6 E6.0	each	-				
B5.1.6	Auxiliary crossarm for tower type 1DT6	per set of three	6				
<b>B5.2</b>	<b>132kV Gantry Steel Structure</b>						
B5.2.1	Gantry steel structure	each	2				
<b>B5.3</b>	<b>Additional galvanized tower steel</b>						
B5.3.1	Fabricated	tonne	-				
B5.3.2	Non-fabricated	tonne	-				
<b>B5</b>	<b>Erection of insulator and fittings:</b>						
	Erection of Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods arcing horn etc.						
B5.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly	each	-				
B5.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly	each	-				
B5.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly	each	36				
B5.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly	each	36				
B5.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly	each	36				
B5.1.6	132kV Jumper suspension insulator string for ACSR Grosbeak, complete assembly	each	66				
B5.1.7	Vibration damper for ACSR Grosbeak	each	72				
B5.1.8	Suspension set for 7x3.25mm GSW earthwire	each	-				
B5.1.9	Tension set for 7x3.25mm GSW earthwire	each	-				
B5.1.10	Vibration damper for 7x4.00mm GSW earthwire	each	-				
B5.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	-				
B5.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	22				
B5.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW	each	12				

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(B) 132kV Feni- Comilla (N) Transmission Line IN-OUT to Chowddagram**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>B6</b>	<b>Erection of phase conductor, earthwire and OPGW</b>						
B6.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.	route-km	0.9				
B6.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.	route-km	-				
B6.3	7x43.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.	route-km	0.9				
B6.4	Erection of single downleads (ACSR Grosbeak) including dropdown from terminal tower to sub-station gantry	set of three	4				
B6.5	Erection of earthwire connection from terminal tower to substation gantry	per wire	2				
B6.6	Erection of OPGW connection from terminal tower to substation Gantry/Mast	per wire	2				
<b>B7</b>	<b>Miscellaneous</b>						
7.1	Temporary diversion of the existing 132kV double circuit line for construction of 2 nos. of 1DT6 towers under the existing 132kV Line	lot	1				

B7.2	Additional counterpoise earthing in accordance with requirement of the Technical specification	per meter	20				
B7.3	Miscellaneous Rates for works certified by the Engineer in accordance with method of Payment						
(a)	Additional Excavation	m <sup>3</sup>	10				
(b)	Additional Concrete	m <sup>3</sup>	10				
(c)	Additional Reinforcement	kg	5				
(d)	Extra for surface resisting cement per cu.m of concrete	m <sup>3</sup>	-				
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							

Name of Bidder \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

<sup>1</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

## Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**
**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>C1</b>	<b>Route Survey &amp; Clearance</b>						
C1.1	Profile Survey in accordance with the requirements of the technical specification, incl. full ground survey with change of route, if any, tower plotting and preparation and submission of route maps, mouza maps profile drawings, SIMM document, etc.	km	30				
C1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	km	30				
<b>C2</b>	<b>Geotechnical Investigation</b>						
C2.1	Geotechnical Investigation in accordance with the requirements of the Technical Specification						
(a)	Level 2	borehole	-				
(b)	Level 3	borehole	-				
(c)	Level 4	borehole	52				
<b>C3</b>	<b>Foundations</b>						
	Foundations for towers including all setting out, Concrete, Reinforcement, Excavation, Pumping, Stub-cutting, Geotechnical Investigation (Level 3), Shuttering, Leveling, Timbering, supply & Installation of foundation steelwork, Earthing Materials, Backfilling, approved Protective Coating & site clearing etc.						
<b>C3.1</b>	<b>Tower Type 1DL</b>						
C3.1.1	Soil category-2	tower	-				
C3.1.2	Soil category-3	tower	30				
C3.1.3	Soil category-4	tower	46				
<b>C3.2</b>	<b>Tower Type 1D1</b>						
C3.2.1	Soil category-2	tower	-				
C3.2.2	Soil category-3	tower	3				
C3.2.3	Soil category-4	tower	3				
<b>C3.3</b>	<b>Tower Type 1D25</b>						
C3.3.1	Soil category-2	tower	-				
C3.3.2	Soil category-3	tower	4				
C3.3.3	Soil category-4	tower	4				
<b>C3.4</b>	<b>Tower Type 1DT6</b>						
C3.4.1	Soil category-2	tower	-				
C3.4.2	Soil category-3	tower	5				
C3.4.3	Soil category-4	tower	6				
<b>C4</b>	<b>Testing of Foundations</b>						
C4.1	Supply (incl. Foundation, steel works), install and test foundation to prove compliance with Technical specification, payment for successful test only: Uplift test for pad & chimney type foundation for tower type 1DL						
C4.2	Individual Pile test including supply, install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):						
(a)	Compression Type test	per test	-				
(b)	Uplift Type test	per test	-				
(c)	Pile Integrity Test	per test	800				

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>C5</b>	<b>Towers</b>						
	Erection of towers complete with all stubs, nuts, bolts, locking bolt/washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, etc.						
<b>C5.1</b>	<b>Tower Type 1DL</b>						
C5.1.1	Tower type 1DL Standard	each	13				
C5.1.2	Tower type 1DL E1.5	each	20				
C5.1.3	Tower type 1DL E3.0	each	12				
C5.1.4	Tower type 1DL E4.5	each	20				
C5.1.5	Tower type 1DL E6.0	each	8				
C5.1.6	Tower type 1DL E9.0	each	3				
<b>C5.2</b>	<b>Tower Type 1D1</b>						
C5.2.1	Tower type 1D1 Standard	each	0				
C5.2.2	Tower type 1D1 E1.5	each	0				
C5.2.3	Tower type 1D1 E3.0	each	1				
C5.2.4	Tower type 1D1 E4.5	each	2				
C5.2.5	Tower type 1D1 E6.0	each	2				
C5.2.6	Tower type 1D1 E9.0	each	1				
C5.2.7	Tower type 1D1 E12.0	each	0				
C5.2.8	Tower type 1D1 E15.0	each	0				
<b>C5.3</b>	<b>Tower Type 1D25</b>						
C5.3.1	Tower type 1D25 Standard	each	2				
C5.3.2	Tower type 1D25 E1.5	each	0				
C5.3.3	Tower type 1D25 E3.0	each	2				
C5.3.4	Tower type 1D25 E4.5	each	2				
C5.3.5	Tower type 1D25 E6.0	each	2				
C5.3.6	Tower type 1D25 E9.0	each	0				
<b>C5.4</b>	<b>Tower Type 1DT6</b>						
C5.4.1	Tower type 1DT6 Standard	each	1				
C5.4.2	Tower type 1DT6 E1.5	each	2				
C5.4.3	Tower type 1DT6 E3.0	each	3				
C5.4.4	Tower type 1DT6 E4.5	each	3				
C5.4.5	Tower type 1DT6 E6.0	each	1				
C5.4.6	Tower type 1DT6 E9.0	each	1				
C5.4.7	Auxiliary crossarm for tower type 1DT6	per set of three	0				
<b>C5.5</b>	<b>Additional galvanized tower steel</b>						
C5.5.1	Fabricated	tonne	2				
C5.5.2	Non-fabricated	tonne	5				
<b>C5.6</b>	<b>Tower Test</b>						
C5.6.1	Proto assembly of all type towers with all extensions to prove compliance with specification. Payment for successful test only. ( * )						
(a)	Tower type 1DL	each	1				
(b)	Tower type 1D1	each	1				
(c)	Tower type 1D25	each	1				
(d)	Tower type 1DT6	each	1				
<b>C6</b>	<b>Erection of insulator and fittings:</b>						
	Erection of Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods arcing horn etc.						
C6.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly	each	456				
C6.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly	each	36				
C6.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly	each	204				

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
C6.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12				
C6.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12				
C6.1.6	132kV 70kN jumper suspension insulator string for ACSR Grosbeak, complete assembly	each	33				

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(C) 132kV Transmission Line Jessor - Benapole**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currency Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
C6.1.7	Vibration damper for ACSR Grosbeak	each	2376				
C6.1.8	Suspension set for 7x3.25mm GSW earthwire	each	-				
C6.1.9	Tension set for 7x3.25mm GSW earthwire	each	-				
C6.1.10	Vibration damper for 7x4.00mm GSW earthwire	each	-				
C6.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	82				
C6.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	44				
C6.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW	each	360				
<b>C7</b>	<b>Erection of phase conductor, earthwire and OPGW</b>						
C7.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.	route-km	30				
C7.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on	route-km	-				
C7.3	7x43.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.	route-km	30				
C7.4	Erection of single downleads (ACSR Grosbeak) including drowndrop from terminal tower to sub-station gantry	set of three	4				
C7.5	Erection of earthwire connection from terminal tower to substation gantry	per wire	2				
C7.6	Erection of OPGW connection from terminal tower to substation Gantry/Mast	per wire	2				
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							
		<div style="text-align: right; margin-right: 50px;">Name of Bidder _____</div> <div style="text-align: right; margin-right: 50px;">Signature of Bidder _____</div>					

<sup>1</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currenc Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>D1</b>	<b>Route Survey &amp; Clearance</b>						
D1.1	Profile Survey in accordance with the requirements of the technical specification, incl. full ground survey with change of route, if any, tower plotting and preparation and submission of route maps, mouza maps profile drawings, SIMM document, etc.	km	1.1				
D1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	km	1.1				
<b>D2</b>	<b>Geotechnical Investigation</b>						
D2.1	Geotechnical Investigation in accordance with the requirements of the Technical Specification						
(a)	Level 2	borehole	-				
(b)	Level 3	borehole	-				
(c)	Level 4	borehole	3				
<b>D3</b>	<b>Foundations</b>						
	Foundations for towers including all setting out, Concrete, Reinforcement, Excavation, Pumping, Stub-cutting, Geotechnical Investigation (Level 3), Shuttering, Leveling, Timbering, supply & Installation of foundation steelwork, Earthing Materials, Backfilling, approved Protective Coating & site clearing etc.						
<b>D3.1</b>	<b>Tower Type 1DT6</b>						
D3.1.1	Soil category-2	tower	-				
D3.1.2	Soil category-3	tower	1				
D3.1.3	Soil category-4	tower	1				
<b>D3.2</b>	<b>Tower Type 1QT6</b>						
D3.2.1	Soil category-2	tower	-				
D3.2.2	Soil category-3	tower	2				
D3.2.3	Soil category-4	tower	1				
<b>D4</b>	<b>Testing of Foundations</b>						
D4.1	Supply (incl. Foundation, steel works), install and test foundation to prove compliance with Technical specification, payment for successful test only: Uplift test for pad & chimney type foundation for tower type 1DT6						
D4.2	Individual Pile test including supply, install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):						
(a)	Compression Type test	per test	-				
(b)	Uplift Type test	per test	-				
(c)	Pile Integrity Test	per test	100				
<b>D5</b>	<b>Towers</b>						
	Erection of towers complete with all stubs, nuts, bolts, locking bolt/washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, etc.						
<b>D5.1</b>	<b>Tower Type 1DT6</b>						
D5.1.1	Tower type 1DT6 Standard	each	0				
D5.1.2	Tower type 1DT6 E1.5	each	0				
D5.1.3	Tower type 1DT6 E3.0	each	0				
D5.1.4	Tower type 1DT6 E4.5	each	1				
D5.1.5	Tower type 1DT6 E6.0	each	1				

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currenc Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
D5.1.6	Auxiliary crossarm for tower type 1DT6	per set of three	2				
<b>D5.2</b>	<b>Tower Type 1QT6</b>						
D5.2.1	Tower type 1QT6 Standard	each	-				
D5.2.2	Tower type 1QT6 E1.5	each	-				
D5.2.3	Tower type 1QT6 E3.0	each	2				
D5.2.4	Tower type 1QT6 E4.5	each	1				
D5.2.5	Tower type 1QT6 E6.0	each	-				
D5.2.6	Tower type 1QT6 E9.0	each	-				
D5.2.7	Auxiliary crossarm for tower type 1QT6	per set of three	2				



Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currenc Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>D5.2</b>	<b>Additional galvanized tower steel</b>						
D5.2.1	Fabricated	tonne	-				
D5.2.2	Non-fabricated	tonne	-				
<b>D5</b>	<b>Erection of insulator and fittings:</b>						
	Erection of Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods arcing horn etc.						
D5.1.1	132kV 70kN Suspension insulator string for ACSR Grosbeak, complete assembly	each	-				
D5.1.2	132kV 120kN Heavy suspension insulator string for ACSR Grosbeak, complete assembly	each	-				
D5.1.3	132kV 120kN Tension insulator string for ACSR Grosbeak, complete assembly	each	84				
D5.1.4	132kV 70kN Inverted low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12				
D5.1.5	132kV 70kN Upright low duty tension insulator string for ACSR Grosbeak, complete assembly	each	12				
D5.1.6	132kV Jumper suspension insulator string for ACSR Grosbeak, complete assembly	each	48				
D5.1.7	Vibration damper for ACSR Grosbeak	each	98				
D5.1.8	Suspension set for 7x3.25mm GSW earthwire	each	-				
D5.1.9	Tension set for 7x3.25mm GSW earthwire	each	-				
D5.1.10	Vibration damper for 7x4.00mm GSW earthwire	each	-				
D5.1.11	OPGW (7x3.25mm S earthwire equivalent) suspension set, complete assembly	each	-				
D5.1.12	OPGW (7x3.25mm S earthwire equivalent) tension set, complete assembly	each	12				
D5.1.13	Vibration damper for 7x3.25mm S earthwire equivalent OPGW	each	12				
<b>D6</b>	<b>Erection of phase conductor, earthwire and OPGW</b>						
D6.1	Phase conductor ACSR Grosbeak including the necessary midspan joints and repair sleeves, six nos. single conductors on the line.	route-km	1.1				
D6.2	7x3.25mm S earthwire including the necessary midspan joints and repair sleeves, one earthwire on the line.	route-km	-				
D6.3	7x43.25mm S earthwire equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes, one OPGW earthwire on the line.	route-km	1.1				
D6.4	Erection of single downleads (ACSR Grosbeak) including dropdown from terminal tower to sub-station gantry	set of three	4				
D6.5	Erection of earthwire connection from terminal tower to substation gantry	per wire	2				
D6.6	Erection of OPGW connection from terminal tower to substation Gantry/Mast	per wire	2				

Section IV. Bidding Form

**Schedule No. 4. Installation and Other Services (Package-10)**

**(D) 132kV Rajshahi - Chapainawabganj Transmission Line IN-OUT to Rahshahi 2**

Item	Description	Unit	Qty. (1)	Unit Price <sup>1</sup>		Total Price <sup>1</sup>	
				Foreign Currency Portion (2)	Local Currenc Portion (3)	Foreign Currency Portion (1) x (2)	Local Currency Portion (1) x (3)
<b>D7</b>	<b>Miscellaneous</b>						
D7.1	Temporary diversion of the existing 132kV double circuit line for construction of 1 nos. of 1DT6 towers under the existing 132kV Line	lot	1				
D7.2	Dismantling of one no. of the existing 132kV tower including removal of chimney portion of foundations and delivering the dismantled materials to PGCB's store	lot	1				
D7.2	Additional counterpoise earthing in accordance with requirement of the Technical specification	per meter	20				
D7.3	Miscellaneous Rates for works certified by the Engineer in accordance with method of Payment						
(a)	Additional Excavation	m <sup>3</sup>	10				
(b)	Additional Concrete	m <sup>3</sup>	10				
(c)	Additional Reinforcement	kg	5				
(d)	Extra for surface resisting cement per cu.m of concrete	m <sup>3</sup>	-				
<b>TOTAL (to Schedule No.6. Grand Summary)</b>							
				<p>Name of Bidder _____</p> <p>Signature of Bidder _____</p>			

<sup>1</sup> Specify currency in accordance with specifications in Bid Data Sheet under ITB 19.1 in Single-stage Bid.

## Section IV. Bidding Form

### Schedule No. 5. Provisional Sums (Package-10)

Item	Description	Amount	
		Foreign	Local
	<i>Not applicable except the cost of Dispute Board</i>		
Cost of Dispute Board <sup>1</sup>			
<b>TOTAL (to Schedule No.6. Grand Summary)</b>			

Name of Bidder \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

Contractor's overhead and profits shall not be included in this amount. This cost will be determined at the time of Contract negotiation with the lowest evaluated bidder (Contractor).

Section IV. Bidding Form

**Schedule No. 6. Grand Summary (Package-10)**

Item	Description	Total Price <sup>1</sup>	
		Foreign	Local
1	Total Schedule No.1. Plant and Mandatory Spare Parts Supplied from Abroad		
	(A) 132kV Transmission Line Madaripur - Shariatpur		
	(B) 132kV Feni- Comilla (N) Transmission Line to Chowddagram		
	(C) 132kV Transmission Line Jessor - Benapole		
	(D) 132kV Rajshahi - Chapainawabganj Transmission Line in-out to Rahshahi 2		
2	Total Schedule No.2. Plant and Mandatory Spare Parts Supplied from within the Employer's Country		
	(A) 132kV Transmission Line Madaripur - Shariatpur		
	(B) 132kV Feni- Comilla (N) Transmission Line to Chowddagram		
	(C) 132kV Transmission Line Jessor - Benapole		
	(D) 132kV Rajshahi - Chapainawabganj Transmission Line in-out to Rahshahi 2		
3	Total Schedule No.3. Design Services		
4	Total Schedule No.4. Installation Services		
	(A) 132kV Transmission Line Madaripur - Shariatpur		
	(B) 132kV Feni- Comilla (N) Transmission Line to Chowddagram		
	(C) 132kV Transmission Line Jessor - Benapole		
	(D) 132kV Rajshahi - Chapainawabganj Transmission Line in-out to Rahshahi 2		
5	Total Schedule No.5. Provisional Sums		
<b>TOTAL (to Bid Form)</b>			

Name of Bidder \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

<sup>1</sup> Specify currency in accordance with specifications in Bid Data Sheet under T.B. 15.1 in Single-stage Bid. Create and use as many columns for Unit Price and Total Price as there are currencies

## Section IV. Bidding Form

### Schedule No. 7. Recommended Spare Parts (Package-10)

Item	Description	Qty.  (1)	Unit Price		Total Price  (1)x(2) or (1)x(3)
			CIF or CIP (foreign parts) (2)	EXW (local parts) (3)	

Name of Bidder \_\_\_\_\_  
  
 Signature of Bidder \_\_\_\_\_

**POWER GRID COMPANY OF BANGLADESH LTD.**

**PLANT DESIGN, SUPPLY AND INSTALLATION OF**  
**PACKAGE 10: 132KV TRANSMISSION LINES MADARIPUR-SHARIATPUR,**  
**FENI-COMILLA(N) IN-OUT TO CHOWDDAGRAM, JESSOR-BENAPOLE AND**  
**RAJSHAHI-CHAPAINAWABGANJ IN-OUT TO RAHSHAHI 2 ON TURNKEY BASIS**

**SCHEDULE C**

**BAR CHART PROGRAMME OF KEY ACTIVITIES**

	Month																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
<b>(1) 132kV Transmission Line MADARIPUR-SHARIATPUR</b> Check Survey Approval of Plan & Profile Drawings Soil test & foundation Manufacture of Tower  Manufacture of Conductor, Insulator, Earthwire, OPGW & accessories Tower Erection Stringing Testing & Commissioning																								
<b>(2) 132kV Transmission Line FENI-COMILLA(N) IN-OUT TO CHOWDDAGRAM</b> Check Survey Approval of Plan & Profile Drawings Soil test & foundation Manufacture of Tower Manufacture of Conductor, Insulator, Earthwire, OPGW & accessories Tower Erection Stringing Testing & Commissioning																								
<b>(3) 132kV Transmission Line JESSOR-BENAPOLE</b> Check Survey Approval of Plan & Profile Drawings Soil test & foundation Manufacture of Tower Manufacture of Conductor, Insulator, Earthwire, OPGW & accessories Tower Erection Stringing Testing & Commissioning																								
<b>(3) 132kV Transmission Line RAJSHAHI-CHAPAINAWABGANJ IN-OUT TO RAHSHAHI 2</b> Check Survey Approval of Plan & Profile Drawings Soil test & foundation Manufacture of Tower Manufacture of Conductor, Insulator, Earthwire, OPGW & accessories Tower Erection Stringing Testing & Commissioning																								

The Works under this turnkey contract shall be completed within 20 (twenty) months from the date of signing of the contract.

**POWER GRID COMPANY OF BANGLADESH LIMITED**  
**National Power Transmission Network Development Project**

**BIDDING DOCUMENT**  
**FOR**  
**PLANT DESIGN, SUPPLY AND INSTALLATION OF**

**PACKAGE 10:**  
**132KV TRANSMISSION LINES MADARIPUR-SHARIATPUR,**  
**FENI-COMILLA(N) IN-OUT TO CHOWDDAGRAM,**  
**JESSOR-BENAPOLE AND**  
**RAJSHAHI-CHAPAINAWABGANJ IN-OUT TO RAHSHAHI 2**  
**ON TURNKEY BASIS**

**SCHEDULE D**

**Proposed Subcontractors/Manufacturers for Major Items of Plant and Services**

The following Subcontractors and/or manufacturers are proposed for carrying out the item of the facilities indicated:

Item	Description	Manufacturer	Place of Manufacture	Place of Testing and Inspection
1.	<b>TOWER</b>			
	Tower			
	Nuts, Bolts, washer etc.			
2.	<b>CONDUCTOR &amp; FITTINGS</b>			
	ACSR conductor			
	Conductor fittings			
3.	<b>EARTHWIRE &amp; FITTINGS (Not applicable)</b>			
	Earthwire			
	Earthwire fittings			
4.	<b>OPGW &amp; FITTINGS</b>			
	OPGW			
	OPGW fittings			
	Joint/Splice Boxes			
5.	<b>INSULATOR &amp; FITTINGS</b>			
	Insulator units			
	Insulator fittings			

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**JESSOR-BENAPOLE AND**  
**RAJSHAHI-CHAPAINAWABGANJ IN-OUT TO RAHSHAHI 2**  
**ON TURNKEY BASIS**

**SCHEDULE E**

**TECHNICAL PARTICULARS AND GUARANTEES**

**A. TOWER**

**A.1 132kV double circuit tower**

Parameter	Tower Type			
	1DL	1D1	1D25	1DT6
<b>Tower Dimensions:</b>				
Total Height of Tower (Standard)				
Vertical Spacing between Conductor-Earthwire				
Horizontal Phase Separation				
Vertical Phase Separation				
Base width (Standard height tower)				
<b>Mass of Tower excluding stubs:</b>				
Total mass of Standard height Tower				
Total mass of E1.5 Tower				
Total mass of E3.0 Tower				
Total mass of E4.5 Tower				
Total mass of E6.0 Tower				
Total mass of E9.0 Tower				
Total mass of E12.0 Tower				
Total mass of E15.0 Tower				
Total mass of E18.0 Tower				
Total mass of E21.0 Tower				
Total mass of E25.0 Tower				
Approximate Ultimate Compression Load/leg (E9.0)				
Approximate Ultimate Uplift Load/leg (E9.0)				



## A.2 132kV Four circuit tower (Not used)

Parameter	Tower Type			
	1QL	1Q15	1Q30	1QT6
<b>Tower Dimensions:</b>				
Total Height of Tower (Standard)				
Vertical Spacing between Conductor-Earthwire				
Horizontal Phase Separation				
Vertical Phase Separation				
Base width (Standard height tower)				
<b>Mass of Tower excluding stubs:</b>				
Total mass of Standard height Tower				
Total mass of E1.5 Tower/M10 for 2DR				
Total mass of E3.0 Tower/M30 for 2DR				
Total mass of E4.5 Tower/M4.5 for 2DAX				
Total mass of E6.0 Tower				
Total mass of E9.0 Tower				
Total mass of E12.0 Tower				
Total mass of E15.0 Tower				
Total mass of E18.0 Tower				
Total mass of E21.0 Tower				
Total mass of E25.0 Tower				
Approximate Ultimate Compression Load/leg (E9.0)				
Approximate Ultimate Uplift Load/leg (E9.0)				

## A.3 Particular of Steel

	Mild Steel			High Yield Steel		
	Standard	Grade	Yield Stress	Standard	Grade	Yield Stress
Steel standard and grades						
Bolt standard and grades						

## **A.4 PILED FOUNDATION DETAILS**

### **A.4.1 132kV Double Circuit Tower**

<b>Tower Type Particulars</b>	<b>1DL (Standard)</b>	<b>1D1 (Standard)</b>	<b>1D25 (Standard)</b>	<b>1DT6 (Standard)</b>
Type of piled foundation				
No. of piles per leg *				
Length of pile * (mm)				
Diameter of pile (mm)				

### **A.4.2 132kV Four Circuit Tower (Not used)**

<b>Tower Type Particulars</b>	<b>1QL (Standard)</b>	<b>1Q15 (Standard)</b>	<b>1Q30 (Standard)</b>	<b>1QT6 (Standard)</b>
Type of piled foundation				
No. of piles per leg *				
Length of pile * (mm)				
Diameter of pile (mm)				

- \* The final figures shall be attained during detailed design of tower foundations and their approval thereof, after award of contract and the foundations shall be supplied accordingly within the contract price.

## **B. CONDUCTOR & EARTHWIRE**

### **B.1 132kVLine**

<b>Parameter</b>	<b>Unit</b>	<b>Conductor</b>	<b>Earthwire (Not used)</b>
Conductor Designation & Type		ACSR Grosbeak	7 x 3.25 Steel
Reference standard		ASTM B232	
Number & Diameter of strands	No. x mm		
Overall Diameter	mm		
Guaranteed Ultimate Tensile Strength	kN		
Final Modulus of elasticity	N/mm <sup>2</sup>		
Coefficient of Linear Expansion	1/degree		
D.C. Resistance at 20°C	ohm/m		
Standard Weight	Kg/m		
Weight of grease	Kg/m		
Drop point of grease	°C		
Standard length on drum	m		
Lay Direction			
Weight of complete drum	kg		
Percentage of random short drum lengths(not more than 4 percent)	%		

## B.2 OPGW & FITTINGS

Parameter	Unit	7×3.25mm Steel Earthwire equivalent OPGW
OPGW Designation & Type		
Number of fiber		24
Reference standard		
Number and Diameter of Aluminium strands	mm	
Number and Diameter of Steel strands	mm	
Corrosion Protection of Steel Strands		
Internal Fibre tube diameter	mm	
Overall diameter	mm	
Guaranteed Ultimate Tensile strength	kN	
Final Modulus of Elasticity	N/mm <sup>2</sup>	
Co-efficient of linear Expansion	1/degree	
DC Resistance at 20°C	ohms/m	
Maximum short circuit current capacity	kA <sup>2</sup> sec	25
Assumed temperature rise	°C	
Standard Weight	kg/m	
Weight of grease	kg/m	
Standard length on drum *	m	
Weight of complete drum	kg	
Maximum drum length	m	
Installation minimum bending radius	m	
<b>OPTICAL CHARACTERISTICS:</b>		
Cut off Wave length	nm	
Attenuation at ..... Nm	dB/km	
Zero dispersion wave length	nm	
Chromatic dispersion at ..... nm	ps/km	
Individual splice loss	dB	
Bit error rate		
<b>OPGW FITTINGS:</b>		
Guaranteed Ultimate Tensile strength	Suspension set	kN
	Tension set	kN
Overall length of set	Suspension set	mm
	Tension set	mm
Mass of set	Suspension set	kg
	Tension set	kg
Drawing Numbers :		
Cross section of OPGW		
Cross section of Non metallic cable		
Joint box		
Fixing Clamps		
OPGW Suspension set		
OPGW Tension set		
OPGW Vibration Damper		

\* Drum length to be finalized after finalization of tower locations as per check survey.

## C. INSULATOR SETS & FITTINGS

### C.1 132kV Line

Parameter	Unit	Insulator Set Type				
		Suspension/ Jumper Suspension	Heavy Suspension	Tension	Upright Low Duty	Inverted Low Duty
Insulator Unit Type No.		U70B	U120B	U120B	U70B	U70B
Dielectric Material		{ .....	.....	Porcelain	.....	.....}
Total creepage per unit	(mm)					
Spacing	(mm)					
Overall shed diameter	(mm)					
Puncture Voltage of unit	(kV)					
Electro Mechanical Failing Load of unit	(kN)					
Drawing No. of Unit						
Type test Certificate No. of Unit						
Number of string and units per string		1x11	1x11	1 x 11	1 x 11	1 x 11
Total creepage of string	(mm)					
Overall length of set	(mm)					
Sag adjuster type and step	(mm)					
Ultimate strength of set	(kN)					
Mass of set	(kg)					
Anticipated -Lightning impulse withstand Voltage	(kV)					
-Power Frequency withstand Voltage	(kV)					
-Corona extinction level	(kV)					

## C.2 SPACERS AND SPACER DAMPERS

### C2.1 Spacer Dampers (Not used)

Parameter	Unit	
Unit Weight	kg	
Material	-	
No. of spacer dampers to be used for each phase per span*	nos.	
Total quantities of spacer dampers for one basic span*	nos.	

- These quantities shall be based on the design of the proposed spacer dampers. The quantities mentioned above may increase at the contractor's cost, if during design approval such increase is necessary.

## A.7 VIBRATION DAMPERS

Parameter	Unit	
Unit Weight of Vibration Dampers		
- for ACSR Grosbeak	kg	
- for 7 x 3.25 S earthwire	kg	
- for 7 x 3.25 S earthwire equivalent OPGW	kg	
Nos. of Vibration dampers to be used for ACSR Grosbeak per standard span	Nos.	
Nos. of Vibration dampers to be used for 7 x 3.25 S earthwire per standard span (Not applicable)	Nos.	
Nos. of Vibration dampers to be used for 7 x 3.25 S earthwire equivalent OPGW per standard span	Nos.	

- \* These quantities shall be based on the design of the proposed vibration dampers. Actual number of vibration damper will be decided according to the Manufacturer's recommendation for each span.

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**SCHEDULE F**

**PROPOSED SUBCONTRACTORS**

The bidder shall propose a list of the Sub-contractors in the following table as per Sub-clause 2.5, Item 6, Subcontractors, Section-3, Evaluation and Qualification Criteria, Volume 1 of 3 of the Bidding Document:

Sl. No.	Name and Address of the Subcontractor

Signature -----  
Date -----

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**SCHEDULE H**

**PROPOSED CONTRACT & SITE ORGANISATION**

**Personnel**

Bidders should provide the names of suitably qualified personnel to meet the requirements specified in Section 3 (Evaluation and Qualification Criteria) of Volume 1 of 3 of the Bidding Document. The data on their experience should be supplied using the Form below for each candidate.

**Form PER – 1: Proposed Personnel**

<b>1.</b>	<b>Title of position*</b>
	<b>Name</b>
<b>2.</b>	<b>Title of position*</b>
	<b>Name</b>
<b>3.</b>	<b>Title of position*</b>
	<b>Name</b>
<b>4.</b>	<b>Title of position*</b>
	<b>Name</b>

\*As listed in Section 3 (Evaluation and Qualification Criteria).



## Form PER – 2: Resume of Proposed Personnel

<b>Position</b>		
<b>Personnel information</b>	<b>Name</b>	<b>Date of birth</b>
	<b>Professional qualifications</b>	
<b>Present employment</b>	<b>Name of employer</b>	
	<b>Address of employer</b>	
	<b>Telephone</b>	<b>Contact (manager / personnel officer)</b>
	<b>Fax</b>	<b>E-mail</b>
	<b>Job title</b>	<b>Years with present employer</b>

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

[illegible]

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**SCHEDULE I**

**DRAWINGS AND DOCUMENTS TO BE SUBMITTED WITH BID**

The following drawings and documents shall be submitted with the Bid:

1. Foundation drawings of all type of towers. The piled system the bidder intends to use for the foundations along with dimensions of piles, the materials of the shaft and pile cap and the maximum possible length of pile which can be installed with the bidder's proposed pile system. Further, the bidders shall give information about the piling method, such as details of casing, methods of soil excavation, type of reinforcement for both pile and pile cap and the facility to transport all equipment.
2. Detailed drawings of all types of insulators and insulator sets including cross section sketch of head portion of all types of disc insulators.
3. Cross-sectional drawings of conductors and detailed drawings of its accessories.
4. Cross-sectional drawings of OPGW and detailed drawings of OPGW accessories.
5. Test Certificates
- 5.1 Dampers

Type test certificates from an independent reputed testing laboratory for the following materials:

- (1) Vibration dampers for phase conductor and OPGW

## 5.2 OPGW

Type test certificates of OPGW (Type tests shall be as stated in Clause 14.7.2.1, Volume 2 of 3 of the Bidding Document) from manufacturer's own laboratory/ independent testing laboratory.

## 5.3 Insulators

### (a) For insulator units:

Type test certificates issued from independent reputed testing laboratory as listed below, outside the manufacturer's country for insulator units which shall include the following tests performed on all the offered types (70kN & 120kN) of insulators as per IEC except power arc test which shall conform to test procedures outlined in Clause 9.6, Volume 2 of 3 of the bidding document:

- (i) Dry lightning impulse voltage withstand test;
- (ii) Wet power frequency voltage withstand test;
- (iii) Electro-mechanical failing load test;
- (iv) Thermal mechanical performance test;
- (v) Impulse voltage puncture test;
- (vi) Power arc test.

List of independent reputed testing laboratories acceptable to the Employer is mentioned below:

- KEMA Laboratories in Holland
- Powertech High Power Laboratories in Canada
- IREQ Montreal in Canada
- CESI in Italy
- Vattenfall in Sweden

Failure to submit the above type test report with the Bid shall result in the rejection of the Bid.

### (b) For insulator string sets:

All the offered or similar types of insulator string sets must be type tested in laboratory which have quality management certificate according to ISO/IEC 17025:2005 which is the standard for general requirement for the competence of testing and calibration laboratories issued by an authorized inspection agency. Type test report shall include the following tests performed on the offered or similar types of insulator string sets as per IEC except power arc test which shall conform to test procedures outlined in Clause 9.6, Volume 2 of 3 of the bidding document:

- (i) Dry lightning impulse voltage withstand test;
- (ii) Wet power frequency voltage withstand test;
- (iii) Radio interference voltage test;
- (iv) Power arc test.

6. Cross-sectional drawings of Optical fibre cable and detailed drawings of accessories.
7. Technical Catalogue, Quality Assurance Certificate ISO 9001:2008 Certification (or equivalent) and Quality Assurance Programme & Typical Quality Plan for the work from the manufacturers of the following equipment:
  - (i) Tower
  - (ii) Conductor & accessories.
  - (iii) OPGW and OPGW accessories.
  - (iv) Insulator and insulator hardware fittings.