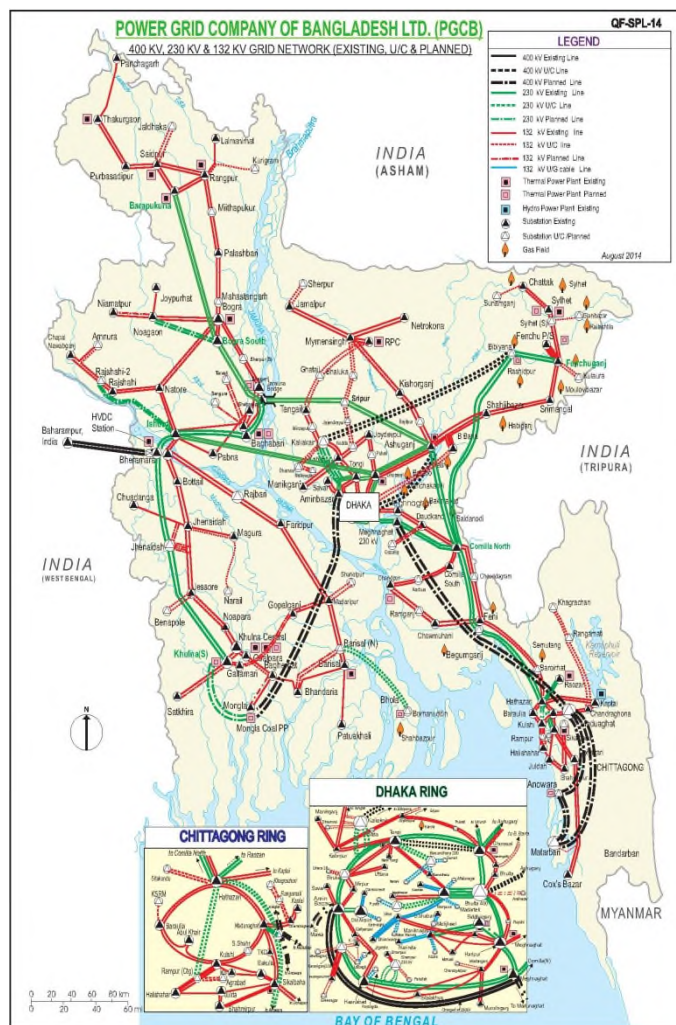


Financial Cooperation
with Bangladesh

BMZ No. 2012 66 436

Transmission System
Improvement Northern
Zone



**Tender Documents for
Design, Supply, Installation, Testing & Commis-
sioning of 230 kV and 132 kV Transmission Lines,
Northern Zone, on Turnkey Basis**

Contract No. PGCB/KfW/2012.66.436/NZTL

Volume 3, November 2016

Employer:



Power Grid Company of Bangladesh (PGCB)
IEB Bhaban (4th Floor), IEB
Ramna, Dhaka-1000, Bangladesh

Consultant:



GOPA-International Energy Consultants GmbH
Justus-von-Liebig-Str. 1, 61352 Bad Homburg, Germany
Phone: +49 (6172) 1791-800; Fax: +49 (6172) 944 95 20
eMail: info@gopa-intec.de; www.gopa-intec.de

Contents of the Tender Documents

Volume 1

- Section I. Instructions to Bidders (ITB)
- Section II. Bid Data Sheet (BDS)
- Section III. Evaluation and Qualification Criteria
- Section IV. Bidding Forms
- Section V. Eligible Countries
- Section VI. Employer's Requirements
- Section VII. General Conditions of Contract (GCC)
- Section VIII. Special Conditions of Contract (PCC)
- Section IX. Contract Forms

Volume 2

- Scope of Works
- Technical Specifications
- Drawings forming Part of the Specifications

Volume 3

- Schedule A: Introduction and Preamble to the Price and Technical Schedules
- Schedule B: Price Schedules
- Schedule C: Bar Chart Program of Key Activities
- Schedule D: Manufacturers, Places of Manufacture and Testing
- Schedule E: Technical Particulars and Guarantees
- Schedule F: Proposed Subcontractors

Table of Contents

Page

1. Schedule A: Introduction and Preamble to the Price and Technical Schedules	1
2. Schedule B: Price Schedules	2
2.1 Schedule B1: Price Schedules for the New 230 kV Ishurdi - Rajshahi OHL	3
2.2 Schedule B2: Price Schedules for the New 132 kV Baghabari - Bangura OHL	4
2.3 Schedule B3: Price Schedules for the New LILO 132 kV Miithapukur to the 132 kV Rangur - Palashbari OHL	5
3. Schedule C: Bar Chart Program of Key Activities - Delivery & Completion Time Schedule	6
4. Schedule D: Manufacturers, Places of Manufacture and Testing	8
5. Schedule E: Technical Particulars and Guarantees	9
5.1 Towers	9
5.1.1 230 kV Towers	9
5.1.2 132 kV Towers	10
5.2 Piled Foundation Details	11
5.2.1 230 kV Towers	11
5.2.2 132kV Towers	11
5.3 Conductor & Earthwire	12
5.3.1 230 kV Line	12
5.3.2 132 kV Line	12
5.4 OPGW & Fittings	13
5.4.1 230 kV Line	13
5.4.2 132 kV Line	14
5.5 Insulator Sets & Fittings	16
5.5.1 230 kV Line	16
5.5.2 132 kV Line	17
5.6 Spacers and Spacer Dampers	18
5.6.1 230 kV Line	18
5.6.2 132 kV Line (Not Used)	18
5.7 Vibration Dampers	19
5.7.1 230 kV Line	19
5.7.2 132 kV Line	19
6. Schedule F: Proposed Subcontractors	20

1. Schedule A: Introduction and Preamble to the Price and Technical Schedules

Not used.

2. Schedule B: Price Schedules

Price Schedules are given hereafter. Bidders are requested to carefully go through the relevant ITB Clauses in Volume 1 to fill in the Price Schedules.

The Bidder shall fill the attached price schedules, sign and stamp them and attach them to the bid.

Please use the excel files enclosed on attached CD:

- NZTL Vol 3 Sched B1 230 kV Ishurdi Rajshahi OHL Price Sched.xlsx
- NZTL Vol 3 Sched B2 132 kV Baghabari Bangura OHL Price Sched.xlsx
- NZTL Vol 3 Sched B3 LILO 132 kV Price Sched.xlsx

2.1 Schedule B1: Price Schedules for the New 230 kV Ishurdi - Rajshahi OHL

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
(2)	CIP (3)						
1	Supply & erection of 230 kV double circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.						
1.1	Tower type "2DL"						
1.1.1	Tower type 2DL		pcs.	90			
1.1.2	Tower type 2DL+1.5 m		pcs.	3			
1.1.3	Tower type 2DL+3 m		pcs.	20			
1.1.4	Tower type 2DL+4.5 m		pcs.	3			
1.1.5	Tower type 2DL+6 m		pcs.	10			
1.1.6	Tower type 2DL+9 m		pcs.	12			
1.1.7	Tower type 2DL+12 m		pcs.	3			
1.1.8	Tower type 2DL+15 m		pcs.	3			
1.2	Tower type "2D10"						
1.2.1	Tower type 2D10		pcs.	10			
1.2.2	Tower type 2D10+1.5 m		pcs.	3			
1.2.3	Tower type 2D10+3 m		pcs.	5			
1.2.4	Tower type 2D10+4.5 m		pcs.	3			
1.2.5	Tower type 2D10+6 m		pcs.	4			
1.2.6	Tower type 2D10+9 m		pcs.	4			
1.2.7	Tower type 2D10+12 m		pcs.	3			
1.2.8	Tower type 2D10+15 m		pcs.	3			
1.2.9	Tower type 2D10+18 m		pcs.	3			
1.3	Tower type "2D25"						
1.3.1	Tower type 2D25		pcs.	7			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
1.3.2	Tower type 2D25+1.5 m		pcs.	2			
1.3.3	Tower type 2D25+3 m		pcs.	2			
1.3.4	Tower type 2D25+4.5 m		pcs.	2			
1.3.5	Tower type 2D25+6 m		pcs.	4			
1.3.6	Tower type 2D25+9 m		pcs.	2			
1.4	Tower type "2DT6"						
1.4.1	Tower type 2DT6		pcs.	6			
1.4.2	Tower type 2DT6+1.5 m		pcs.	2			
1.4.3	Tower type 2DT6+3 m		pcs.	3			
1.4.4	Tower type 2DT6+4.5 m		pcs.	2			
1.4.5	Tower type 2DT6+6 m		pcs.	2			
1.4.6	Tower type 2DT6+9 m		pcs.	9			
2	Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints						
2.1	Conductor ACSR MALLARD type (double circuit line, both circuits erected, two conductors per phase) ^[3]		Route km	80.00			
2.2	One optical fibre ground wire, 48 fibres OPGW, mechanically compatible with 93 mm² ACS type ^[3]		Route km	80.00			
2.3	One earth shield wire 93 mm² GS type ^[3]		Route km	80.00			
3	Insulator strings, with associated suspension and tension clamps for ACSR 495 mm² conductor						
3.1	Single suspension string, 120 kN (including Insulators, fittings, suspension clamp)		pcs.	1,002			
3.2	Single suspension string, heavy, 210 kN (including insulators, fittings, suspension clamp)		pcs.	228			
3.3	Double tension string, 2 x 210 kN (including insulators, jumper, fittings, tension clamp)		pcs.	504			
3.4	Single tension string, upright low duty 120 kN (including insulators, jumper, fittings, tension clamp)		pcs.	12			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
3.5	Double tension string, inverted low duty 120 kN (including insulators, jumper, fittings, tension clamp)		pcs.	12			
4	Earthwire sets, complete with all accessories						
4.1	Suspension Set		Set	183			
4.2	Tension set		Set	88			
5	OPGW sets, complete with all accessories, incl. armour rods and earth bounds						
5.1	Suspension set		Set	183			
5.2	Tension non-joint set		Set	21			
5.3	Tension joint set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		Set	22			
5.4	Joint box		pcs.	22			
6	Dampers						
6.1	Vibration damper for phase conductor		pcs.	5,424			
6.2	Spacer damper		pcs.	9,500			
6.2	Vibration damper for earthwire		pcs.	452			
6.3	Vibration damper for OPGW		pcs.	452			
7	Aerial Markers						
7.1	Bird diverters		pcs.	60			
7.2	Bird guards, one bird guard per each crossarm applied on intermediate towers		pcs.	183			
7.3	Aircraft warning spheres		pcs.	50			
8	Tower Earthing						
8.1	Earthing type A		pcs.	180			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
8.2	Earthing type B		pcs.	40			
8.3	Earthing type C		pcs.	6			
8.4	Earthing type D (If required by specific soil conditions)		pcs.				
9	Foundations including stubs, cleats and setting (units per tower)						
9.1	Concrete pyramid (or pad) and chimney foundation		Set	5			
9.2	Piled foundation		Set	195			
9.3	Raft foundation		Set	4			
9.4	Rigid frame foundations		Set	22			
10	Mandatory Spare Parts and Tools						
10.1	Tower type 2DL+12		pcs	3			
10.2	Tower type 2D25+9		pcs	1			
10.3	Tower type 2DT6+9		pcs	1			
10.4	Conductor ACSR MALLARD type (approximately four drums)		km	10			
10.5	Optical fibre ground wire, 48 fibres OPGW, mechanically compatible with 93 mm ² ACS type (approx. one drum)		km	5			
10.6	Shield Wire 93 mm ² GS type		km	5			
10.7	Single suspension string, 120 kN (including insulators, fittings, suspension clamp)		pcs	12			
10.8	Single suspension string, heavy, 210 kN (including insulators, fittings, suspension clamp)		pcs	6			
10.9	Single tension string, upright low duty 120 kN (incl. insulators, jumper, fittings, tension clamp)		pcs	6			
10.10	Double tension string, 2 x 210 kN (including insulators, jumper, fittings, tension clamp)		pcs	18			
10.11	Suspension set GS 93 mm ²		pcs	0			
10.12	Tension set GS 93 mm ²		pcs	0			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
10.13	OPGW 48 fibres suspension set		pcs	2			
10.14	OPGW 48 fibres tension set		pcs	2			
10.15	OPGW junction box		pcs	2			
10.16	Vibration damper for phase conductor		pcs	30			
10.17	Vibration damper for earth shield wire		pcs	20			
10.18	Vibration damper for OPGW		pcs	20			
10.19	Repair sleeve for conductor		pcs	25			
10.20	Repair sleeve for earth shield wire		pcs	0			
10.21	Midspan joints for conductor		pcs	20			
10.22	Midspan joints for earth shield wire		pcs	5			
10.23	Bird diverters		pcs	5			
10.24	Bird guard		pcs	5			
10.25	Aircraft warning markers		pcs	5			
10.26	Terminal ground resistance tester (tools)		pcs	1			
10.27	Fusion splicer OPGW (tools)		pcs	1			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
11	Miscellaneous						
11.1	Set of temporary earthing equipment, as described in Annex 16-1		set	2			
11.2	Elcometer for measuring galvanization thickness		pcs	1			
Total (to Schedule No. 5. Grand Summary)							

1 Bidders shall enter a code representing the country of origin of all imported plant and equipment.

2 In accordance with specifications in Bid Data Sheet under ITB 19.1.

3 Definition of route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
1	Supply & erection of 230 kV double circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.				
1.1	Tower type "2DL"				
1.1.1	Tower type 2DL	pcs.	90		
1.1.2	Tower type 2DL+1.5 m	pcs.	3		
1.1.3	Tower type 2DL+3 m	pcs.	20		
1.1.4	Tower type 2DL+4.5 m	pcs.	3		
1.1.5	Tower type 2DL+6 m	pcs.	10		
1.1.6	Tower type 2DL+9 m	pcs.	12		
1.1.7	Tower type 2DL+12 m	pcs.	3		
1.1.8	Tower type 2DL+15 m	pcs.	3		
1.2	Tower type "2D10"				
1.2.1	Tower type 2D10	pcs.	10		
1.2.2	Tower type 2D10+1.5 m	pcs.	3		
1.2.3	Tower type 2D10+3 m	pcs.	5		
1.2.4	Tower type 2D10+4.5 m	pcs.	3		
1.2.5	Tower type 2D10+6 m	pcs.	4		
1.2.6	Tower type 2D10+9 m	pcs.	4		
1.2.7	Tower type 2D10+12 m	pcs.	3		
1.2.8	Tower type 2D10+15 m	pcs.	3		
1.2.9	Tower type 2D10+18 m	pcs.	3		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
1.3	Tower type "2D25"				
1.3.1	Tower type 2D25	pcs.	7		
1.3.2	Tower type 2D25+1.5 m	pcs.	2		
1.3.3	Tower type 2D25+3 m	pcs.	2		
1.3.4	Tower type 2D25+4.5 m	pcs.	2		
1.3.5	Tower type 2D25+6 m	pcs.	4		
1.3.6	Tower type 2D25+9 m	pcs.	2		
1.4	Tower type "2DT6"				
1.4.1	Tower type 2DT6	pcs.	6		
1.4.2	Tower type 2DT6+1.5 m	pcs.	2		
1.4.3	Tower type 2DT6+3 m	pcs.	3		
1.4.4	Tower type 2DT6+4.5 m	pcs.	2		
1.4.5	Tower type 2DT6+6 m	pcs.	2		
1.4.6	Tower type 2DT6+9 m	pcs.	9		
2	Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints				
2.1	Conductor ACSR MALLARD type (double circuit line, both circuits erected, two conductors per phase) [3]	Route km	80.00		
2.2	One optical fibre ground wire, 48 fibres OPGW, mechanically compatible with 93 mm ² GS type [3]	Route km	80.00		
2.3	One Earth Shield Wire 93 mm ² GS type ^[3]	Route km	80.00		
3	Insulator strings, with associated suspension and tension clamps for ACSR 495 mm² conductor				
3.1	Single suspension string, 120 kN (including insulators, fittings, suspension clamp)	pcs.	1,002		
3.2	Single suspension string, heavy, 210 kN (including insulators, fittings, suspension clamp)	pcs.	228		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
3.3	Double tension string, 2 x 210 kN (including insulators, jumper, fittings, tension clamp)	pcs.	504		
3.4	Single tension string, upright low duty 120 kN (including insulators, jumper, fittings, tension clamp)	pcs.	12		
3.5	Double tension string, inverted low duty 120 kN (including insulators, jumper, fittings, tension clamp)	pcs.	12		
4	Earthwire sets, complete with all accessories				
4.1	Suspension set	Set	183		
4.2	Tension set	Set	88		
5	OPGW sets, complete with all accessories, including armour rods and earth bounds				
5.1	Suspension set	Set	183		
5.2	Tension non-joint set	Set	21		
5.3	Tension joint set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)	Set	22		
5.4	Joint box	pcs.	22		
6	Dampers				
6.1	Vibration damper for phase conductor	pcs.	5,424		
6.2	Spacer damper	pcs.	9,500		
6.2	Vibration damper for earthwire	pcs.	452		
6.3	Vibration damper for OPGW	pcs.	452		
7	Aerial markers				
7.1	Bird diverters	pcs.	60		
7.2	Bird guards, one bird guard per each crossarm applied on intermediate towers	set of three.	183		
7.3	Aircraft warning markers	pcs.	50		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
8	Tower earthing				
8.1	Earthing type A	pcs.	180		
8.2	Earthing type B	pcs.	40		
8.3	Earthing type C	pcs.	6		
8.4	Earthing type D (If required by specific soil conditions)	pcs.			
9	Foundations, incl. stubs, cleats and setting (units per tower)				
9.1	Concrete pyramid (or pad) and chimney foundation	Set	5		
9.2	Piled foundation	Set	195		
9.3	Raft foundation	Set	4		
9.4	Rigid frame foundations	Set	22		
10	Mandatory Spare Parts and Tools				
10.1	Tower type 2DL+12	pcs	3		
10.2	Tower type 2D25+9	pcs	1		
10.3	Tower type 2DT6+9	pcs	1		
10.4	Conductor ACSR MALLARD type (approximately four drums)	km	10		
10.5	Optical fibre ground wire, 48 fibres OPGW, mechanically compatible with 93 mm ² GS type (approx. one drum)	km	5		
10.6	Shield wire 93 mm ² GS type	km	5		
10.7	Single suspension string, 120 kN (including insulators, fittings, suspension clamp)	pcs	12		
10.8	Single suspension string, heavy, 210 kN (including insulators, fittings, suspension clamp)	pcs	6		
10.9	Single tension string, upright low duty 120 kN (including insulators, jumper, fittings, tension clamp)	pcs	6		
10.10	Double tension string, 2 x 210 kN (including insulators, jumper, fittings, tension clamp)	pcs	18		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
10.11	Suspension set GS 93 mm ²	pcs	0		
10.12	Tension set GS 93 mm ²	pcs	0		
10.13	OPGW 48 fibres suspension set	pcs	2		
10.14	OPGW 48 fibres tension set	pcs	2		
10.15	OPGW junction box	pcs	2		
10.16	Vibration damper for phase conductor	pcs	30		
10.17	Vibration damper for earth shield wire	pcs	20		
10.18	Vibration damper for OPGW	pcs	20		
10.19	Repair sleeve for conductor	pcs	25		
10.20	Repair sleeve for earth shield wire	pcs	0		
10.21	Midspan joints for conductor	pcs	20		
10.22	Midspan joints for earth shield wire	pcs	5		
10.23	Bird diverters	pcs	5		
10.24	Bird guard	pcs	5		
10.25	Aircraft warning markers	pcs	5		
10.26	Terminal ground resistance tester (tools)	pcs	1		
10.27	Fusion splicer OPGW (tools)	pcs	1		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
11	Miscellaneous				
11.1	Set of temporary earthing equipment, as described in Annex 16-1	set	2		
11.2	Elcometer for measuring galvanization thickness	pcs	1		
Total (to Schedule No. 5. Grand Summary)					

1 In accordance with specifications in Bid Data Sheet under ITB 19.1.

2 Definition of route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

Schedule No. 3. Design Services

				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
1.	Line Design						
1.2	Detailed line design including plan and profiles; conductor, earthwire and OPGW sag tension calculations; tower spotting, establishment of line schedule; Design of insulator strings, OPGW and earthwire attachments	Lump sum	1				
2	Tower Design						
2.1	Towers: Design calculations and fabrication drawings including body extensions, hill-side extensions, stubs , and signs as per specifications						
2.1.1	Tower type "2DL"	u	1				
2.1.2	Tower type "2D25"	u	1				
2.1.3	Tower type "2DT6"	u	1				
2.1.4	Special tower	u	1				
3	Foundation Design						
3.1	Foundations design for soil for all soil types including additional soil investigation and additional soil resistivity measurement	Lump sum					
Total (to Schedule No. 5. Grand Summary)							

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
1	Survey and soil investigation works						
1.1	Survey Work						
1.1.1	Check 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, profile drawings, SIMM documents, etc.	km	80				
1.1.2	Route clearance in accordance with requirements of the technical specification including payment of damage compensation	unit	226				
1.2	Geotechnical Investigations incl. taking samples, logging and lab testing						
1.2.1	Boreholes (minimum one per tower), incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification	unit	226				
1.2.2	Trial pits (one per tower)	unit	43				
1.2.3	Soil resistivity tests (one per tower)	unit	226				
2	Installation of foundations, incl. stubs, cleats and setting (units per tower)						
2.1	Concrete pyramid (or pad) and chimney foundation	Set	5				
2.2	Piled foundation	Set	195				
2.3	Raft foundation	Set	4				
2.4	Rigid frame foundations	Set	22				
3	Earthing Installation						
3.1	Earthing type 1	pcs.	180				
3.2	Earthing type 2	pcs.	40				

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
3.3	Earthing type 3	pcs.	6				
3.4	Earthing type 4	pcs.					
4	Tower erection, incl. all bolts, nuts, plates, leg extensions, safety devices, step bolts, accessories and extensions						
4.1	Tower type "2DL"						
4.1.1	Tower type 2DL	pcs.	90				
4.1.2	Tower type 2DL+1.5 m	pcs.	3				
4.1.3	Tower type 2DL+3 m	pcs.	20				
4.1.4	Tower type 2DL+4.5 m	pcs.	3				
4.1.5	Tower type 2DL+6 m	pcs.	10				
4.1.6	Tower type 2DL+9 m	pcs.	12				
4.1.7	Tower type 2DL+12 m	pcs.	3				
4.1.8	Tower type 2DL+15 m	pcs.	3				
4.2	Tower type "2D10"						
4.2.1	Tower type 2D10	pcs.	10				
4.2.2	Tower type 2D10+1.5 m	pcs.	3				
4.2.3	Tower type 2D10+3 m	pcs.	5				
4.2.4	Tower type 2D10+4.5 m	pcs.	3				
4.2.5	Tower type 2D10+6 m	pcs.	4				
4.2.6	Tower type 2D10+9 m	pcs.	4				
4.2.7	Tower type 2D10+12 m	pcs.	3				
4.2.8	Tower type 2D10+15 m	pcs.	3				

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
4.2.9	Tower type 2D10+18 m	pcs.	3				
4.3	Tower type "2D25"						
4.3.1	Tower type 2D25	pcs.	7				
4.3.2	Tower type 2D25+1.5 m	pcs.	2				
4.3.3	Tower type 2D25+3 m	pcs.	2				
4.3.4	Tower type 2D25+4.5 m	pcs.	2				
4.3.5	Tower type 2D25+6 m	pcs.	4				
4.3.6	Tower type 2D25+9 m	pcs.	2				
4.4	Tower type "2DT6"						
4.4.1	Tower type 2DT6	pcs.	6				
4.4.2	Tower type 2D6+1.5 m	pcs.	2				
4.4.3	Tower type 2D6+3 m	pcs.	3				
4.4.4	Tower type 2D6+4.5 m	pcs.	2				
4.4.5	Tower type 2D6+6 m	pcs.	2				
4.4.6	Tower type 2D6+9 m	pcs.	9				
5	Stringing of double circuit line, single conductor per phase, 1 OPGW and 1 conventional earthwire (Length approx. Route km)²						
5.1	Conductor ACSR MALLARD (Double circuit line, both circuits erected, two conductor per phase) including:	route km	80				
5.1.1	Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps						
5.1.2	Sagging and clipping						
5.1.3	Installation of armour rods and dampers						

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
5.1.4	Pilot strings and jumpers						
5.2	One optical fibre ground wire, 48 fibres OPGW, mechanically compatible with 93 mm ² ACS type including:	route km	80				
5.2.1	Tension and semi-tension joints, suspension clamps, armour rods and dampers						
5.2.2	Sagging and clipping						
5.2.3	Installation of intermediate junction boxes and terminal junction boxes at substation gantries						
5.2.4	Earthing jumpers						
5.3	One earth shieldwire 93 mm ² ACS type	route km	80				
5.3.1	Compressed dead-ends, compression junction sleeves suspension clamps, armour rods and dampers						
5.3.2	Sagging and clipping						
5.3.3	Earthing jumpers						
6	Documentation						
6.1	Establishment of as-built drawings, manuals and all requested documents as per specifications	Lump sum					
7	Miscellaneous						
7.1	Transport of the material and equipment supplied from Employer's Country	Lump sum					
7.2	Insurance of material and equipment supplied from Employer's Country during transport	Lump sum					
7.3	Painting of bottom part of towers in accordance with Section 21	u	2				

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
7.4	Environmental and Social Services - PROVISIONAL SUM (for potential physical measures and the unforeseen which may not be covered by the current description of the scope of supply – however strictly related to environmental and social services only) It is not fixed sum and it may be implemented fully, partly or even not implemented in the end	Lump sum	1	50,000.00		50,000.00	
Total (to Schedule No. 5. Grand Summary)							

1 In accordance with specifications in Bid Data Sheet under ITB 19.1 .

2 Definition of Route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

Schedule No. 5. Grand Summary

Item	Description	Total Price ¹	
		Foreign [EURO]	Local [BDT]
	Total Schedule 1: Plant and Mandatory Spare Parts Supplied from Abroad		
	Total Schedule 2: Plant and Mandatory Spare Parts Supplied from Within the Employer's Country		
	Total Schedule 3: Design Services		
	Total Schedule 4: Installation and Other Services		
Total (to Bid Form)			

1 In accordance with specifications in Bid Data Sheet under ITB 19.1.

Name of Bidder:

Signature of Bidder:

Schedule No. 6. Recommended Spare Parts

[illegible]

Name of Bidder:

Signature of Bidder:

2.2 Schedule B2: Price Schedules for the New 132 kV Baghabari - Bangura OHL

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
	(2)					CIP (3)	
1	Supply & erection of 132 kV double circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.						
1.1	Tower type "1DL"						
1.1.1	Tower type 1DL		pcs.	25			
1.1.2	Tower type 1DL+1.5 m		pcs.	3			
1.1.3	Tower type 1DL+3 m		pcs.	10			
1.1.4	Tower type 1DL+4.5 m		pcs.	3			
1.1.5	Tower type 1DL+6 m		pcs.	2			
1.1.6	Tower type 1DL+9 m		pcs.	2			
1.1.7	Tower type 1DL+12 m		pcs.	2			
1.1.8	Tower type 1DL+15 m		pcs.	2			
1.2	Tower type "1D10"						
1.2.1	Tower type 1D10		pcs.	6			
1.2.2	Tower type 1D10+1.5 m		pcs.	1			
1.2.3	Tower type 1D10+3 m		pcs.	1			
1.2.4	Tower type 1D10+4.5 m		pcs.	1			
1.2.5	Tower type 1D10+6 m		pcs.	4			
1.2.6	Tower type 1D10+9 m		pcs.	3			
1.2.7	Tower type 1D10+12 m		pcs.	1			
1.2.8	Tower type 1D10+15 m		pcs.	1			
1.2.9	Tower type 1D10+18 m		pcs.	1			
1.3	Tower type "1D25"						
1.3.1	Tower type 1D25		pcs.	1			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
1.3.2	Tower type 1D25+1.5 m		pcs.	1			
1.3.3	Tower type 1D25+3 m		pcs.	1			
1.3.4	Tower type 1D25+4.5 m		pcs.	1			
1.3.5	Tower type 1D25+6 m		pcs.	1			
1.3.6	Tower type 1D25+9 m		pcs.	1			
1.4	Tower type "1D60"						
1.4.1	Tower type 1D60		pcs.	3			
1.4.2	Tower type 1D60+1.5 m		pcs.	1			
1.4.3	Tower type 1D60+3 m		pcs.	1			
1.4.4	Tower type 1D60+4.5 m		pcs.	1			
1.4.5	Tower type 1D60+6 m		pcs.	1			
1.4.6	Tower type 1D60+9 m		pcs.	1			
1.5	Tower type "1DT9"						
1.5.1	Tower type 1DT9		pcs.	1			
1.5.2	Tower type 1DT9+3 m		pcs.	1			
1.5.3	Tower type 1DT9+6 m		pcs.				
1.5.4	Tower type 1DT9+9 m		pcs.				
2	Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints						
2.1	Conductor ACSR GROSBEAK type (double circuit line, one circuit erected, one conductor per phase) ^[3]		Route km	25.00			
2.2	One optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type ^[3]		Route km	25.00			
2.3	One earth shield wire 59 mm ² GS type ^[3]		Route km	0.10			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
3	Insulator strings, with associated suspension and tension clamps for ACSR 375 mm² conductor						
3.1	Single suspension string, 70 kN (including insulators, fittings, suspension clamp)		pcs.	151			
3.2	Single suspension string, heavy 120 kN (including insulators, fittings, suspension clamp)		pcs.	57			
3.3	Single tension string, 120 kN (including insulators, jumper, fittings, tension clamp)		pcs.	90			
3.4	Single tension string, upright low duty 70 kN (including insulators, jumper, fittings, tension clamp)		pcs.	6			
3.5	Single tension string, inverted low duty 70 kN (including insulators, jumper, fittings, tension clamp)		pcs.	6			
4	Earthwire sets, complete with all accessories						
4.1	Suspension Set		Set	0			
4.2	Tension set		Set	4			
5	OPGW sets, complete with all accessories, incl. armour rods and earth bounds						
5.1	Suspension set		Set	68			
5.2	Tension non-joint set		Set	8			
5.3	Tension joint set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		Set	8			
5.4	Joint box		pcs.	8			
6	Dampers						
6.1	Vibration damper for phase conductor		pcs.	504			
6.2	Vibration damper for earthwire		pcs.	0			
6.3	Vibration damper for OPGW		pcs.	168			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
7	Aerial Markers						
7.1	Bird diverters		pcs.	60			
7.2	Bird guards, one bird guard per each crossarm applied on intermediate towers		set of three	68			
7.3	Aircraft warning spheres		pcs.	20			
8	Tower Earthing						
8.1	Earthing type A		pcs.	60			
8.2	Earthing type B		pcs.	20			
8.3	Earthing type C		pcs.	4			
8.4	Earthing type D (If required by specific soil conditions)		pcs.				
9	Foundations including stubs, cleats and setting (units per tower)						
9.1	Concrete pyramid (or pad) and chimney foundation		Set	5			
9.2	Piled foundation		Set	67			
9.3	Raft foundation		Set	2			
9.4	Rigid frame foundations		Set	10			
10	Mandatory Spare Parts and Tools						
10.1	Tower type 1DL+12		pcs	3			
10.2	Tower type 1D25+9		pcs	1			
10.3	Tower type 1D60+9		pcs	1			
10.4	Conductor ACSR GROSBEAK type (approximately four drums)		km	10			
10.5	Optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type (approx. one drum)		km	5			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
10.6	Single suspension string, 70 kN (including insulators, fittings, suspension clamp)		pcs	12			
10.7	Single suspension string, heavy 120 kN (including insulators, fittings, suspension clamp)		pcs	6			
10.8	Single tension string, 120 kN (including insulators, jumper, fittings, tension clamp)		pcs	18			
10.9	Suspension set ACS 59mm ²		pcs	0			
10.10	Tension set ACS 59 mm ²		pcs	0			
10.11	OPGW 24 fibres suspension set		pcs	2			
10.12	OPGW 24 fibres tension set		pcs	2			
10.13	OPGW junction box		pcs	2			
10.14	Vibration damper for phase conductor		pcs	30			
10.15	Vibration damper for earth shield wire		pcs	20			
10.16	Vibration damper for OPGW		pcs	20			
10.17	Repair sleeve for conductor		pcs	25			
10.18	Repair sleeve for earth shield wire		pcs	0			
10.19	Midspan joints for conductor		pcs	20			
10.20	Midspan joints for earth shield wire		pcs	5			
10.21	Bird diverters		pcs	5			
10.22	Bird guard		pcs	5			
10.23	Aircraft warning markers		pcs	5			
10.24	Terminal ground resistance tester (tools)		pcs	1			
10.25	Fusion splicer OPGW (tools)		pcs	1			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
11	Miscellaneous						
11.1	Set of temporary earthing equipment, as described in Annex 16-1		set	2			
11.2	Elcometer for measuring galvanization thickness		pcs	1			
Total (to Schedule No. 5. Grand Summary)							

- 1 Bidders shall enter a code representing the country of origin of all imported plant and equipment.
- 2 In accordance with specifications in Bid Data Sheet under ITB 19.1.
- 3 Definition of Route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
1	Supply & erection of 132 kV double circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.				
1.1	Tower type "1DL"				
1.1.1	Tower type 1DL	pcs.	25		
1.1.2	Tower type 1DL+1.5 m	pcs.	3		
1.1.3	Tower type 1DL+3 m	pcs.	10		
1.1.4	Tower type 1DL+4.5 m	pcs.	3		
1.1.5	Tower type 1DL+6 m	pcs.	2		
1.1.6	Tower type 1DL+9 m	pcs.	2		
1.1.7	Tower type 1DL+12 m	pcs.	2		
1.1.8	Tower type 1DL+15 m	pcs.	2		
1.2	Tower type "1D10"				
1.2.1	Tower type 1D10	pcs.	6		
1.2.2	Tower type 1D10+1.5 m	pcs.	1		
1.2.3	Tower type 1D10+3 m	pcs.	1		
1.2.4	Tower type 1D10+4.5 m	pcs.	1		
1.2.5	Tower type 1D10+6 m	pcs.	4		
1.2.6	Tower type 1D10+9 m	pcs.	3		
1.2.7	Tower type 1D10+12 m	pcs.	1		
1.2.8	Tower type 1D10+15 m	pcs.	1		
1.2.9	Tower type 1D10+18 m	pcs.	1		
1.3	Tower type "1D25"				
1.3.1	Tower type 1D25	pcs.	1		
1.3.2	Tower type 1D25+1.5 m	pcs.	1		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
1.3.3	Tower type 1D25+3 m	pcs.	1		
1.3.4	Tower type 1D25+4.5 m	pcs.	1		
1.3.5	Tower type 1D25+6 m	pcs.	1		
1.3.6	Tower type 1D25+9 m	pcs.	1		
1.4	Tower type "1D60"				
1.4.1	Tower type 1D60	pcs.	3		
1.4.2	Tower type 1D60+1.5 m	pcs.	1		
1.4.3	Tower type 1D60+3 m	pcs.	1		
1.4.4	Tower type 1D60+4.5 m	pcs.	1		
1.4.5	Tower type 1D60+6 m	pcs.	1		
1.4.6	Tower type 1D60+9 m	pcs.	1		
1.5	Tower type "1DT9"				
1.5.1	Tower type 1DT9	pcs.	1		
1.5.2	Tower type 1DT9+3 m	pcs.	1		
1.5.3	Tower type 1DT0+6 m	pcs.			
1.5.4	Tower type 1DT9+9 m	pcs.			
2	Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints				
2.1	Conductor ACSR GROSBEAK type (double circuit line, one circuit erected, one conductor per phase) ^[3]	Route km	25.00		
2.2	One optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type ^[3]	Route km	25.00		
2.3	One earth shield wire 59 mm ² GS type [3]	Route km	0.10		
3	Insulator strings, with associated suspension and tension clamps for ACSR 375 mm² conductor				
3.1	Single suspension string, 70 kN (including insulators, fittings, suspension clamp)	pcs.	151		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
3.2	Single suspension string, heavy 120 kN (including insulators, fittings, suspension clamp)	pcs.	57		
3.3	Single tension string, 120 kN (including insulators, jumper, fittings, tension clamp)	pcs.	90		
3.4	Single tension string, upright low duty 70 kN (including insulators, jumper, fittings, tension clamp)	pcs.	6		
3.5	Single tension string, inverted low duty 70 kN (including insulators, jumper, fittings, tension clamp)	pcs.	6		
4	Earthwire sets, complete with all accessories				
4.1	Suspension set	Set	0		
4.2	tension set ACS 59 mm ²	Set	4		
5	OPGW sets, complete with all accessories, including armour rods and earth bounds				
5.1	Suspension set	Set	68		
5.2	Tension non-joint set	Set	8		
5.3	Tension joint set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)	Set	8		
5.4	Joint box	pcs.	8		
6	Dampers				
6.1	Vibration damper for phase conductor	pcs.	504		
6.2	Vibration damper for earthwire	pcs.	0		
6.3	Vibration damper for OPGW	pcs.	168		
7	Aerial markers				
7.1	Bird diverters	pcs.	60		
7.2	Bird guards	pcs.	80		
7.3	Aircraft warning markers	pcs.	20		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
8	Tower earthing				
8.1	Earthing type A	pcs.	60		
8.2	Earthing type B	pcs.	20		
8.3	Earthing type C	pcs.	4		
8.4	Earthing type D (If required by specific soil conditions)	pcs.			
9	Foundations, incl. stubs, cleats and setting (units per tower)				
9.1	Concrete pyramid (or pad) and chimney foundation	Set	5		
9.2	Piled foundation	Set	67		
9.3	Raft foundation	Set	2		
9.4	Rigid frame foundations	Set	10		
10	Mandatory Spare Parts and Tools				
10.1	Tower type 1DL+12	pcs	3		
10.2	Tower type 1D25+9	pcs	1		
10.3	Tower type 1D60+9	pcs	1		
10.4	Conductor ACSR GROSBEAK type (approximately four drums)	km	10		
10.5	Optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type (approx. one drum)	km	5		
10.6	Single suspension string, 70 kN (including insulators, fittings, suspension clamp)	pcs	12		
10.7	Single suspension string, heavy 120 kN (including insulators, fittings, suspension clamp)	pcs	6		
10.8	Single tension string, 120 kN (including insulators, jumper, fittings, tension clamp)	pcs	18		
10.9	Suspension set ACS 59mm ²	pcs	0		
10.10	Tension set ACS 59 mm ²	pcs	0		
10.11	OPGW 24 Fibres suspension set	pcs	2		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
10.12	OPGW 24 Fibres tension set	pcs	2		
10.13	OPGW junction box	pcs	2		
10.14	Vibration damper for phase conductor	pcs	30		
10.15	Vibration damper for earth shield wire	pcs	20		
10.16	Vibration damper for OPGW	pcs	20		
10.17	Repair sleeve for conductor	pcs	25		
10.18	Repair sleeve for earth shield wire	pcs	0		
10.19	Midspan joints for conductor	pcs	20		
10.20	Midspan joints for earth shield wire	pcs	5		
10.21	Bird diverters	pcs	5		
10.22	Bird guard	pcs	5		
10.23	Aircraft warning markers	pcs	5		
10.24	Terminal ground resistance tester (tools)	pcs	1		
10.25	Fusion splicer OPGW (tools)	pcs	1		
11	Miscellaneous				
11.1	Set of temporary earthing equipment, as described in Annex 16-1	set	2		
11.2	Elcometer for measuring galvanization thickness	pcs	1		
Total (to Schedule No. 5. Grand Summary)					

1 In accordance with specifications in Bid Data Sheet under ITB 19.1.

2 Definition of Route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

Schedule No. 3. Design Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
1.	Line Design						
1.2	Detailed line design including plan and profiles; conductor, earthwire and OPGW sag tension calculations; tower spotting, establishment of line schedule; Design of insulator strings, OPGW and earthwire attachments	Lump sum	1				
2	Foundation Design						
2.1	Foundations design for soil for all soil types including additional soil investigation and additional soil resistivity measurement	Lump sum					
Total (to Schedule No. 5. Grand Summary)							

1 In accordance with specifications in Bid Data Sheet under ITB 19.1.

2 Please specify the currency.

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
1	Survey and soil investigation works						
1.1	Survey Work						
1.1.1	Check 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, profile drawings, SIMM documents, etc.	km	25				
1.1.2	Route clearance in accordance with requirements of the technical specification including payment of damage compensation	unit	84				
1.2	Geotechnical investigations including taking samples, logging and lab testing						
1.2.1	Boreholes (minimum one per tower), incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification	unit	84				
1.2.2	Trial pits (one per tower)	unit	16				
1.2.3	Soil resistivity tests (one per tower)	unit	84				
2	Installation of foundations, incl. stubs, cleats and setting (units per tower)						
2.1	Concrete pyramid (or pad) and chimney foundation	Set	5				
2.2	Piled foundation	Set	67				
2.3	Raft foundation	Set	2				
2.4	Rigid frame foundations	Set	10				
3	Earthing Installation						
3.1	Earthing type 1	pcs.	60				
3.2	Earthing type 2	pcs.	20				
3.3	Earthing type 3	pcs.	4				
3.4	Earthing type 4	pcs.					

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
4	Tower erection, incl. all bolts, nuts, plates, leg extensions, safety devices, step bolts, accessories and extensions						
4.1	Tower type "1DL"						
4.1.1	Tower type 1DL	u	25				
4.1.2	Tower type 1DL+1.5 m	u	3				
4.1.3	Tower type 1DL+3 m	u	10				
4.1.4	Tower type 1DL+4.5 m	u	3				
4.1.5	Tower type 1DL+6 m	u	2				
4.1.6	Tower type 1DL+9 m	u	2				
4.1.7	Tower type 1DL+12 m		2				
4.1.8	Tower type 1DL+15 m	u	2				
4.2	Tower type "1D10"						
4.2.1	Tower type 1D10	u	6				
4.2.2	Tower type 1D10+1.5 m	u	1				
4.2.3	Tower type 1D10+3 m	u	1				
4.2.4	Tower type 1D10+4.5 m	u	1				
4.2.5	Tower type 1D10+6 m	u	4				
4.2.6	Tower type 1D10+9 m	u	3				
4.2.7	Tower type 1D10+12 m	u	1				
4.2.8	Tower type 1D10+15 m	u	1				
4.2.9	Tower type 1D10+18 m	u	1				
4.3	Tower type "1D25"						
4.3.1	Tower type 1D25	u	1				

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
4.3.2	Tower type 1D25+1.5 m	u	1				
4.3.3	Tower type 1D25+3 m	u	1				
4.3.4	Tower type 1D25+4.5 m	u	1				
4.3.5	Tower type 1D25+6 m	u	1				
4.3.6	Tower type 1D25+9 m	u	1				
4.4	Tower type "1D60"						
4.4.1	Tower type 1D60	u	3				
4.4.2	Tower type 1D60+1.5 m	u	1				
4.4.3	Tower type 1D60+3 m	u	1				
4.4.4	Tower type 1D60+4.5 m	u	1				
4.4.5	Tower type 1D60+6 m	u	1				
4.4.6	Tower type 1D60+9 m	u	1				
4.5	Tower type "1DT9"						
4.4.1	Tower type 1DT9	u	1				
4.4.2	Tower type 1DT9+3 m	u	1				
4.4.3	Tower type 1DT9+6 m	u					
4.4.4	Tower type 1DT9+9 m	u					
5	Stringing of double circuit line, single conductor per phase, 1 OPGW and 1 conventional earthwire (Length approx. Route km)²						
5.1	Conductor ACSR GROSBEAK type (Double circuit line, one circuit erected, one conductor per phase) including:	route km	25				
5.1.1	Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps						

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
5.1.2	Sagging and clipping						
5.1.3	Installation of armour rods and dampers						
5.1.4	Pilot strings and jumpers						
5.2	One optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type including:	route km	25				
5.2.1	Tension and semi-tension joints, suspension clamps, armour rods and dampers						
5.2.2	Sagging and clipping						
5.2.3	Installation of intermediate junction boxes and terminal junction boxes at substation gantries						
5.2.4	Earthing jumpers						
5.3	One earth shield wire 59 mm ² GS type	route km	0.1				
5.3.1	Compressed dead-ends, compression junction sleeves suspension clamps, armour rods and dampers						
5.3.2	Sagging and clipping						
5.3.3	Earthing jumpers						
6	Documentation						
6.1	Establishment of as-built drawings, manuals and all requested documents as per specifications	Lump sum					
7	Miscellaneous						
7.1	Transport of the material and equipment supplied from Employer's Country	Lump sum					
7.2	Insurance of material and equipment supplied from Employer's Country during transport	Lump sum					

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
7.3	Painting of bottom part of towers in accordance with Section 21	u	2				
7.4	Environmental and Social Services - PROVISIONAL SUM (for potential physical measures and the unforeseen which may not be covered by the current description of the scope of supply – however strictly related to environmental and social services only) It is not fixed sum and it may be implemented fully, partly or even not implemented in the end	Lump sum	1	50,000.00		50,000.00	
Total (to Schedule No. 5. Grand Summary)							

1 In accordance with specifications in Bid Data Sheet under ITB 19.1 .

2 Definition of route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

Schedule No. 5. Grand Summary

Item	Description	Total Price ¹	
		Foreign [EURO]	Local [BDT]
	Total Schedule 1: Plant and Mandatory Spare Parts Supplied from Abroad		
	Total Schedule 2: Plant and Mandatory Spare Parts Supplied from Within the Employer's Country		
	Total Schedule 3: Design Services		
	Total Schedule 4: Installation and Other Services		
Total (to Bid Form)			

1 In accordance with specifications in Bid Data Sheet under ITB 19.1.

Name of Bidder:

Signature of Bidder:

Schedule No. 6. Recommended Spare Parts

[illegible]

Name of Bidder:

Signature of Bidder:

2.3 Schedule B3: Price Schedules for the New LILO 132 kV Miithapukur to the 132 kV Rangur - Palashbari OHL

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
1	Supply & erection of 132 kV FOUR circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, aerthing, etc.						
1.1	Tower type "1DL"						
1.1.1	Tower type 1DL		pcs.	1			
1.1.2	Tower type 1DL+1.5 m		pcs.	1			
1.1.3	Tower type 1DL+3 m		pcs.	1			
1.1.4	Tower type 1DL+4.5 m		pcs.	1			
1.1.5	Tower type 1DL+6 m		pcs.	1			
1.1.6	Tower type 1DL+9 m		pcs.	1			
1.1.7	Tower type 1DL+12 m		pcs.				
1.1.8	Tower type 1DL+15 m		pcs.				
1.2	Tower type "1D10"						
1.2.1	Tower type 1D10		pcs.	1			
1.2.2	Tower type 1D10+1.5 m		pcs.				
1.2.3	Tower type 1D10+3 m		pcs.	1			
1.2.4	Tower type 1D10+4.5 m		pcs.				
1.2.5	Tower type 1D10+6 m		pcs.	1			
1.2.6	Tower type 1D10+9 m		pcs.	1			
1.2.7	Tower type 1D10+12 m		pcs.				
1.2.8	Tower type 1D10+15 m		pcs.				
1.3	Tower type "1D25"						
1.3.1	Tower type 1D25		pcs.				
1.3.2	Tower type 1D25+1.5 m		pcs.				

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
1.3.3	Tower type 1D25+3 m		pcs.				
1.3.4	Tower type 1D25+4.5 m		pcs.				
1.3.5	Tower type 1D25+6 m		pcs.				
1.3.6	Tower type 1D25+9 m		pcs.				
1.4	Tower type "1D60"						
1.4.1	Tower type 1D60		pcs.	1			
1.4.2	Tower type 1D60+1.5 m		pcs.				
1.4.3	Tower type 1D60+3 m		pcs.	1			
1.4.4	Tower type 1D60+4.5 m		pcs.				
1.4.5	Tower type 1D60+6 m		pcs.				
1.4.6	Tower type 1D60+9 m		pcs.				
1.5	Tower type "1DT9"						
1.5.1	Tower type 1DT9		pcs.	1			
1.5.2	Tower type 1DT9+3 m		pcs.	1			
1.5.3	Tower type 1DT9+6 m		pcs.	1			
1.5.4	Tower type 1DT9+9 m		pcs.	1			
2	Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints						
2.1	Conductor ACSR GROSBEAK type (double circuit line, both circuits erected, one conductor per phase) ^[3]		Route km	4.00			
2.2	One optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type ^[3]		Route km	4.00			
2.3	One earth shield wire 59 mm ² ACS type [3]		Route km	0.10			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
3	Insulator strings, with associated suspension and tension clamps for ACSR 375 mm² conductor						
3.1	Single suspension string, 70 kN (including insulators, fittings, suspension clamp)		pcs.	48			
3.2	Single suspension string, heavy, 120 kN (including insulators, fittings, suspension clamp)		pcs.	24			
3.3	Single tension string, 120 kN (including insulators, jumper, fittings, tension clamp)		pcs.	72			
3.4	Single tension string, upright low duty 70 kN (including insulators, jumper, fittings, tension clamp)		pcs.	12			
3.5	Single tension string, inverted low duty 70 kN (incl. insulators, jumper, fittings, tension clamp)		pcs.	12			
4	Earthwire sets, complete with all accessories						
4.1	Suspension set		set				
4.2	Tension set		set	4			
5	OPGW sets, complete with all accessories, incl. armour rods and earth bounds						
5.1	Suspension set		set	10			
5.2	Tension non-joint set		set	2			
5.3	Tension joint set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	2			
5.4	Joint box		pcs.	4			
6	Dampers						
6.1	Vibration damper for phase conductor		pcs.	192			
6.2	Vibration damper for earthwire		pcs.				
6.3	Vibration damper for OPGW		pcs.	28			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
7	Aerial Markers						
7.1	Bird diverters		pcs.				
7.2	Bird guards, one bird guard per each crossarm applied on intermediate towers		set of three	10			
7.3	Aircraft warning spheres		pcs.				
8	Tower Earthing						
8.1	Earthing type A		pcs.	10			
8.2	Earthing type B		pcs.	4			
8.3	Earthing type C		pcs.	2			
8.4	Earthing type D (If required by specific soil conditions)		pcs.				
9	Foundations including stubs, cleats and setting (units per tower)						
9.1	Concrete pyramid (or pad) and chimney foundation		set	2			
9.2	Piled foundation		set	12			
9.3	Raft foundation		set				
9.4	Rigid frame foundations		set	2			
10	Mandatory Spare Parts and Tools						
10.1	Tower type 1DL+12		pcs				
10.2	Tower type 1D25+9		pcs				
10.3	Tower type 1D60+9		pcs				
10.4	Conductor ACSR GROSBEAK type		km				
10.5	Optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm² ACS type		km				
10.6	Single suspension string, 70 kN (including insulators, fittings, suspension clamp)		pcs				

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
10.7	Single tension string, 120 kN (including insulators, jumper, fittings, tension clamp)		pcs				
10.8	Suspension set GS 59mm ²		pcs				
10.9	Tension set GS 59 mm ²		pcs				
10.10	OPGW 24 fibres suspension set		pcs				
10.11	OPGW 24 fibres tension set		pcs				
10.12	OPGW junction box		pcs				
10.13	Vibration damper for Phase conductor		pcs				
10.14	Vibration damper for earth shield wire		pcs				
10.15	Vibration damper for OPGW		pcs				
10.16	Repair sleeve for conductor		pcs				
10.17	Repair sleeve for earth shield wire		pcs				
10.18	Midspan joints for conductor		pcs				
10.19	Midspan joints for earth shield wire		pcs				
10.20	Bird diverters		pcs				
10.21	Bird guard		pcs				
10.22	Aircraft warning markers		pcs				
10.23	Terminal ground resistance tester (tools)		pcs				
10.24	Fusion splicer OPGW (tools)		pcs				

Name of Bidder:

Signature of Bidder:

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

Item	Description	Country of origin ¹	Unit	Quantity (1)	Unit Price ² [EURO]		Total Price ² [EURO] (1) x (3)
					(2)	CIP (3)	
11	Miscellaneous						
11.1	Set of temporary earthing equipment, as described in Annex 16-1		set				
11.2	Elcometer for measuring galvanization thickness		pcs				
Total (to Schedule No. 5. Grand Summary)							

- 1 Bidders shall enter a code representing the country of origin of all imported plant and equipment.
- 2 In accordance with specifications in Bid Data Sheet under ITB 19.1.
- 3 Definition of Route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
1	Supply & erection of 132 kV FOUR circuit towers, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, aerthing, etc.				
1.1	Tower type "1DL"				
1.1.1	Tower type 1DL	pcs.	1		
1.1.2	Tower type 1DL+1.5 m	pcs.	1		
1.1.3	Tower type 1DL+3 m	pcs.	1		
1.1.4	Tower type 1DL+4.5 m	pcs.	1		
1.1.5	Tower type 1DL+6 m	pcs.	1		
1.1.6	Tower type 1DL+9 m	pcs.	1		
1.1.7	Tower type 1DL+12 m	pcs.			
1.1.8	Tower type 1DL+15 m	pcs.			
1.2	Tower type "1D10"				
1.2.1	Tower type 1D10	pcs.	1		
1.2.2	Tower type 1D10+1.5 m	pcs.			
1.2.3	Tower type 1D10+3 m	pcs.	1		
1.2.4	Tower type 1D10+4.5 m	pcs.			
1.2.5	Tower type 1D10+6 m	pcs.	1		
1.2.6	Tower type 1D10+9 m	pcs.	1		
1.2.7	Tower type 1D10+12 m	pcs.			
1.2.8	Tower type 1D10+15 m	pcs.			
1.3	Tower type "1D25"				
1.3.1	Tower type 1D25	pcs.			
1.3.2	Tower type 1D25+1.5 m	pcs.			
1.3.3	Tower type 1D25+3 m	pcs.			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
1.3.4	Tower type 1D25+4.5 m	pcs.			
1.3.5	Tower type 1D25+6 m	pcs.			
1.3.6	Tower type 1D25+9 m	pcs.			
1.4	Tower type "1D60"				
1.4.1	Tower type 1D60	pcs.	1		
1.4.2	Tower type 1D60+1.5 m	pcs.			
1.4.3	Tower type 1D60+3 m	pcs.	1		
1.4.4	Tower type 1D60+4.5 m	pcs.			
1.4.5	Tower type 1D60+6 m	pcs.			
1.4.6	Tower type 1D60+9 m	pcs.			
1.5	Tower type "1DT9"				
1.5.1	Tower type 1DT9	pcs.	1		
1.5.2	Tower type 1DT9+3 m	pcs.	1		
1.5.3	Tower type 1DT9+6 m	pcs.	1		
1.5.4	Tower type 1DT9+9 m	pcs.	1		
2	Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints				
2.1	Conductor ACSR GROSBEAK type (double circuit line, both circuits erected, one conductor per phase) ^[3]	Route km	4.00		
2.2	One optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type ^[3]	Route km	4.00		
2.3	One earth shield wire 59 mm ² GS type [3]	Route km	0.10		
3	Insulator strings, with associated suspension and tension clamps for ACSR 375 mm² conductor				
3.1	Single suspension string, 70 kN (including insulators, fittings, suspension clamp)	pcs.	48		
3.2	Single suspension string, heavy, 120 kN (including insulators, fittings, suspension clamp)	pcs.	24		
3.3	Single tension string, 120 kN (including insulators, jumper, fittings, tension clamp)	pcs.	72		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
3.4	Single tension string, upright low duty 70 kN (including insulators, jumper, fittings, tension clamp)	pcs.	12		
3.5	Single tension string, inverted low duty 70 kN (including insulators, jumper, fittings, tension clamp)	pcs.	12		
4	Earthwire sets, complete with all accessories				
4.1	Suspension set	Set			
4.2	Tension set	Set	4		
5	OPGW sets, complete with all accessories, including armour rods and earth bounds				
5.1	Suspension set	Set	10		
5.2	Tension non-joint set	Set	2		
5.3	Tension joint set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)	Set	2		
5.4	Joint box	pcs.	4		
6	Dampers				
6.1	Vibration damper for phase conductor	pcs.	192		
6.2	Vibration damper for Earthwire	pcs.			
6.3	Vibration damper for OPGW	pcs.	28		

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
7	Aerial Markers				
7.1	Bird diverters	pcs.			
7.2	Bird guards, one bird guard per each crossarm applied on intermediate towers	set of three	10		
7.3	Aircraft warning markers	pcs.			
8	Tower Earthing				
8.1	Earthing type A	pcs.	10		
8.2	Earthing type B	pcs.	4		
8.3	Earthing type C	pcs.	2		
8.4	Earthing type D (If required by specific soil conditions)	pcs.			
9	Foundations, incl. stubs, cleats and setting (units per tower)				
9.1	Concrete pyramid (or pad) and chimney foundation	Set	2		
9.2	Piled foundation	Set	12		
9.3	Raft foundation	Set			
9.4	Rigid frame foundations	Set	2		
10	Mandatory Spare Parts and Tools				
10.1	Tower type 1DL+12	pcs			
10.2	Tower type 1D25+9	pcs			
10.3	Tower type 1D60+9	pcs			
10.4	Conductor ACSR GROSBEAK type (approximately four drums)	km			
10.5	Optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type (approx. one drum)	km			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
10.6	Single suspension string, 70 kN (including insulators, fittings, suspension clamp)	pcs			
10.7	Single tension string, 120 kN (including insulators, jumper, fittings, tension clamp)	pcs			
10.8	Suspension set GS 59mm ²	pcs			
10.9	Tension set GS 59 mm ²	pcs			
10.10	OPGW 24 fibres suspension set	pcs			
10.11	OPGW 24 fibres tension set	pcs			
10.12	OPGW junction box	pcs			
10.13	Vibration damper for Phase conductor	pcs			
10.14	Vibration damper for earth shield wire	pcs			
10.15	Vibration damper for OPGW	pcs			
10.16	Repair sleeve for conductor	pcs			
10.17	Repair sleeve for earth shield wire	pcs			
10.18	Midspan joints for conductor	pcs			
10.19	Midspan joints for earth shield wire	pcs			
10.20	Bird diverters	pcs			
10.21	Bird guard	pcs			
10.22	Aircraft warning markers	pcs			
10.23	Terminal ground resistance tester (tools)	pcs			
10.24	Fusion splicer OPGW (tools)	pcs			

Name of Bidder:

Signature of Bidder:

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

Item	Description	Unit	Quantity (1)	EXW Unit Price ¹ [BDT] (2)	EXW Total Price ¹ [BDT] (1) x (2)
11	Miscellaneous				
11.1	Set of temporary earthing equipment, as described in Annex 16-1	set			
11.2	Elcometer for measuring galvanization thickness	pcs			
Total (to Schedule No. 5. Grand Summary)					

1 In accordance with specifications in Bid Data Sheet under ITB 19.1.

2 Definition of Route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

Schedule No. 3. Design Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
1.	Line Design						
1.2	Detailed line design including plan and profiles; conductor, earthwire and OPGW sag tension calculations; tower spotting, establishment of line schedule; Design of insulator strings, OPGW and earthwire attachments	Lump sum	1				
2	Foundation Design						
2.1	Foundation design for soil for all soil types including additional soil investigation and additional soil resistivity measurement	Lump sum					
Total (to Schedule No. 5. Grand Summary)							

1 In accordance with specifications in Bid Data Sheet under ITB 19.1.

2 Please specify the Currency.

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
1	Survey and soil investigation works						
1.1	Survey Work						
1.1.1	Check 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, profile drawings, SIMM documents, etc.	km	4				
1.1.2	Route clearance in accordance with requirements of the technical specification including payment of damage compensation	unit	16				
1.2	Geotechnical investigations including taking samples, logging and lab testing						
1.2.1	Boreholes (minimum one per tower), incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification	unit	16				
1.2.2	Trial pits (One per tower)	unit	8				
1.2.3	Soil resistivity tests (one per tower)	unit	16				
2	Installation of foundations, incl. stubs, cleats and setting (units per tower)						
2.1	Concrete pyramid (or pad) and chimney foundation	Set	2				
2.2	Piled foundation	Set	12				
2.3	Raft foundation	Set	0				
2.4	Rigid frame foundations	Set	2				
3	Earthing Installation						
3.1	Earthing type 1	pcs.	10				
3.2	Earthing type 2	pcs.	4				

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
3.3	Earthing type 3	pcs.	2				
3.4	Earthing type 4	pcs.					
4	Tower erection, incl. all bolts, nuts, plates, leg extensions, safety devices, step bolts, accessories and extensions						
4.1	Tower type "1DL"						
4.1.1	Tower type 1DL	u	1				
4.1.2	Tower type 1DL+1.5 m	u	1				
4.1.3	Tower type 1DL+3 m	u	1				
4.1.4	Tower type 1DL+4.5 m	u	1				
4.1.5	Tower type 1DL+6 m	u	1				
4.1.6	Tower type 1DL+9 m	u	1				
4.1.7	Tower type 1DL+12 m						
4.1.8	Tower type 1DL+15 m	u					
4.2	Tower type "1D10"						
4.2.1	Tower type 1D10	u	1				
4.2.2	Tower type 1D10+1.5 m	u					
4.2.3	Tower type 1D10+3 m	u	1				
4.2.4	Tower type 1D10+4.5 m	u					
4.2.5	Tower type 1D10+6 m	u	1				
4.2.6	Tower type 1D10+9 m	u	1				
4.2.7	Tower type 1D10+12 m	u					
4.2.8	Tower type 1D10+15 m	u					

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
4.3	Tower type "1D25"						
4.3.1	Tower type 1D25	u					
4.3.2	Tower type 1D25+1.5 m	u					
4.3.3	Tower type 1D25+3 m	u					
4.3.4	Tower type 1D25+4.5 m	u					
4.3.5	Tower type 1D25+6 m	u					
4.3.6	Tower type 1D25+9 m	u					
4.4	Tower type "1D60"						
4.4.1	Tower type 1D60	u	1				
4.4.2	Tower type 1D60+1.5 m	u					
4.4.3	Tower type 1D60+3 m	u	1				
4.4.4	Tower type 1D60+4.5 m	u					
4.4.5	Tower type 1D60+6 m	u					
4.4.6	Tower type 1D60+9 m	u					
4.5	Tower type "1DT9"						
4.4.1	Tower type 1DT9	u	1				
4.4.2	Tower type 1DT9+3 m	u	1				
4.4.3	Tower type 1DT9+6 m	u	1				
4.4.4	Tower type 1DT9+9 m	u	1				

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
5	Stringing of double circuit line, single conductor per phase, 1 OPGW and 1 conventional earthwire (Length approx. Route km)²						
5.1	Conductor ACSR GROSBEAK type (Double circuit line, both circuits erected, one conductor per phase) including:	route km	4				
5.1.1	Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps						
5.1.2	Sagging and clipping						
5.1.3	Installation of armour rods and dampers						
5.1.4	Pilot strings and jumpers						
5.2	One optical fibre ground wire, 24 fibres OPGW, mechanically compatible with 59 mm ² ACS type including:	route km	4				
5.2.1	Tension and semi-tension joints, suspension clamps, armour rods and dampers						
5.2.2	Sagging and clipping						
5.2.3	Installation of intermediate junction boxes and terminal junction boxes at substation gantries						
5.2.4	Earthing jumpers						
5.3	One earth shield wire 59 mm ² GS type	route km	0.1				
5.3.1	Compressed dead-ends, compression junction sleeves suspension clamps, armour rods and dampers						
5.3.2	Sagging and clipping						
5.3.3	Earthing jumpers						

Name of Bidder:

Signature of Bidder:

Schedule No. 4. Installation and Other Services

Item	Description	Unit	Quantity (1)	Unit Price ¹		Total Price ¹	
				Foreign Currency Portion [EURO] (2)	Local Currency Portion [BDT] (3)	Foreign [EURO] (1) x (2)	Local [BDT] (1) x (3)
6	Documentation						
6.1	Establishment of as-built drawings, manuals and all requested documents as per specifications	Lump sum					
7	Miscellaneous						
7.1	Transport of the material and equipment supplied from Employer's Country	Lump sum					
7.2	Insurance of material and equipment supplied from Employer's Country during transport	Lump sum					
7.3	Painting of bottom part of towers in accordance with Section 21	u	2				
7.4	Environmental and Social Services - PROVISIONAL SUM (for potential physical measures and the unforeseen which may not be covered by the current description of the scope of supply – however strictly related to environmental and social services only) It is not fixed sum and it may be implemented fully, partly or even not implemented in the end	Lump sum	1	50,000.00		50,000.00	
Total (to Schedule No. 5. Grand Summary)							

1 In accordance with specifications in Bid Data Sheet under ITB 19.1 .

2 Definition of route km: Route km is the transmission line distance between two terminal points in plan view. Route km is exclusive sag and other electrical clearances, elevation differences etc. The Contractor shall incorporate all such extra costs in his unit rate.

Name of Bidder:

Signature of Bidder:

Schedule No. 5. Grand Summary

Item	Description	Total Price ¹	
		Foreign [EURO]	Local [BDT]
	Total Schedule 1: Plant and Mandatory Spare Parts Supplied from Abroad		
	Total Schedule 2: Plant and Mandatory Spare Parts Supplied from Within the Employer's Country		
	Total Schedule 3: Design Services		
	Total Schedule 4: Installation and Other Services		
Total (to Bid Form)			

¹ In accordance with specifications in Bid Data Sheet under ITB 19.1.

Name of Bidder:

Signature of Bidder:

Schedule No. 6. Recommended Spare Parts

[illegible]

Name of Bidder:

Signature of Bidder:

3. Schedule C: Bar Chart Program of Key Activities - Delivery & Completion Time Schedule

To be filled by the Bidder and attached to the bid. Bidders may use the attached excel file

- BGD 1800 NZTL Vol 3 Sched C - Bar Chart.xls

	Month																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. New 230 kV OHL Ishurdi - Raishahi																								
Check Survey																								
Approval of plan & profile drawings																								
Tower design																								
Foundation design																								
Soil test & foundation																								
Tower testing																								
Manufacturing of towers																								
Approval of specification of conductor, earthwire, OPGE, insulator & fittings																								
Manufacturing of conductor, insulator, earthwire, OPGW & accessories																								
Tower erection																								
Manufacture of fibre optic cable & fittings																								
Stringing																								
Testing & commissioning																								
2. New 132 kV OHL Baghabari - Bangura																								
Check survey																								
Approval of plan & profile drawings																								
Tower design																								
Foundation design																								
Soil test & foundation																								
Tower testing																								
Manufacturing of towers																								
Approval of specification of conductor, earthwire, OPGE, insulator & fittings																								
Manufacturing of conductor, insulator, earthwire, OPGW & accessories																								
Tower erection																								
Manufacture of fibre optic cable & fittings																								
Stringing																								
Testing & commissioning																								
3. New LILO 132 kV Miithapukur to 132 kV Rangur - Palashbari OHL																								
Check survey																								
Approval of plan & profile drawings																								
Tower design																								
Foundation design																								
Soil test & foundation																								
Tower testing																								
Manufacturing of towers																								
Approval of specification of conductor, earthwire, OPGE, insulator & fittings																								
Manufacturing of conductor, insulator, earthwire, OPGW & accessories																								
Tower erection																								
Manufacturing of fibre optic cable & fittings																								
Stringing																								
Testing & commissioning																								

The works under this turnkey contract shall be completed within 24 (twenty four) months from the contract effective date.

Name of Bidder:

Signature of Bidder:

4. Schedule D: Manufacturers, Places of Manufacture and Testing

The following form shall be filled and attached to the bid. Bidders are free to propose more than one Manufacturer for each item.

Manufacturers

The following Manufacturers are proposed for carrying out the facilities:

Item	Description	Manufacturer	Place of Manufacture	Place of Testing and Inspection
1.	Towers			
	Tower			
2.	Conductor & Fittings			
	Conductor			
	Conductor fittings			
3.	Earthwire & Fittings			
	Earthwire			
	Earthwire fittings			
4.	OPGW & Fittings			
	OPGW			
	OPGW fittings			
5.	Insulator & Fittings			
	Insulator units			
	Insulator fittings			

5. Schedule E: Technical Particulars and Guarantees

5.1 Towers

5.1.1 230 kV Towers

Parameters	Unit	Tower Type			
		2DL	2D10	2D25	2DT6
Total height of tower (standard)	(mm)				
Vertical spacing between conductor- earthwire	(mm)				
Horizontal phase separation	(mm)				
Vertical phase separation	(mm)				
Total approx. mass of standard height tower without stub & cleat*	(kg)				
Total approx. mass of E1.5 tower*	(kg)				
Total approx. mass of E3.0 tower**	(kg)				
Total approx. mass of E4.5 tower**	(kg)				
Total approx. mass of E6.0 tower**	(kg)				
Total approx. mass of E9.0 tower**	(kg)				
Total approx. mass of E12.0 tower**	(kg)				
Total approx. mass of E15.0 Tower**	(kg)				
Total approx. mass of stub & cleat*	(kg)				
Approximate ultimate compression load/leg (E9.0 & E15)*	(kN)				
Approximate ultimate uplift load/leg (E9.0 & E15)*	(kN)				

* The final figures will be obtained during detailed design of towers and the approval thereof after award of contract, and the towers shall be supplied accordingly within the contract price.

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

5.1.2 132 kV Towers

Parameter	Tower Type				
	1DL	1D10	1D25	1D60	1DT9
Tower dimensions:					
Total height of tower (standard)					
Vertical spacing between conductor-earthwire					
Horizontal phase separation					
Vertical phase separation					
Base width (standard height tower)					
Mass of tower excluding stubs*:					
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*					
Approximate ultimate compression load/leg (E9.0)*					
Approximate ultimate uplift load/leg (E9.0)*					

* The final figures will be obtained during detailed design of towers and the approval thereof after award of contract, and the towers shall be supplied accordingly within the contract price.

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

5.2 Piled Foundation Details

5.2.1 230 kV Towers

Tower Type Particulars	2DL (Standard)	2D10 (Standard)	2D25 (Standard)	2DT6 (Standard)
Type of piled foundation				
No. of piles per leg*				
Length of pile* (mm)				
Diameter of pile (mm)				

5.2.2 132kV Towers

Tower Type Particulars	1DL (Standard)	1D10 (Standard)	1D25 (Standard)	1D60 (Standard)	1DT9 (Standard)
Type of piled foundation					
No. of piles per leg*					
Length of pile* (mm)					
Diameter of pile (mm)					

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

5.3 Conductor & Earthwire

5.3.1 230 kV Line

Parameter	Unit	Conductor	Earthwire
Conductor designation & type		ACSR Mallard	7/4.0 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 ²		
Coefficient of linear expansion	1/degree		
D.C. resistance at 20°C	ohm/km		
Standard weight	kg/km		
Weight of grease	kg/km		
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)	%		

5.3.2 132 kV Line

Parameter	Unit	Conductor
Conductor designation & type		ACSR Grosbeak
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 ²	
Coefficient of linear expansion	1/degree	
D.C. resistance at 20°C	ohm/km	
Standard weight	kg/km	
Weight of grease	kg/km	
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)	%	

5.4 OPGW & Fittings

5.4.1 230 kV Line

Parameter	Unit	
OPGW designation & type		(7×4.00 S earthwire equivalent)
Number of fibres		48
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 ²	
Coefficient of linear expansion	1/degree	
DC resistance at 20°C	ohms/m	
Maximum short circuit current capacity	kA ² 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	
Optical Characteristics:		
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		
OPGW Fittings:		
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		

Parameter	Unit	
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.

5.4.2 132 kV Line

Parameter	Unit	
OPGW designation & type		7 x 3.25 mm steel earthwire equivalent
Number of fibres		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 ²	
Co-efficient of linear expansion	1/degree	
DC resistance at 20°C	ohms/m	
Maximum short circuit current capacity	kA ² 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	
Optical Characteristics:		
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		
OPGW Fittings:		
Guaranteed ultimate tensile strength		
• Suspension set	kN	
• Tension set	kN	

Parameter	Unit	
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.

5.5 Insulator Sets & Fittings

5.5.1 230 kV Line

Parameter	Unit	Insulator Set Type				
		Suspension	Heavy Suspension	Double Tension	Upright Low Duty / Inverted	Jumper Suspension
Insulator unit type no.		U120B	U210B	U210B	U120B	U120B
Dielectric material		porcelain	porcelain	porcelain	porcelain	porcelain
Total creepage per unit	mm					
Spacing	mm					
Overall shed diameter	mm					
Puncture voltage	kV					
Electro-mechanical failing load of unit	kN					
Drawing no. of unit						
Type test certificate no.						
Number of units per string	pcs.	17	14	2 x 14	17	17
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 with-stand voltage	kV					
• Corona extinction level	kV					

5.5.2 132 kV Line

Parameter	Unit	Insulator Set Type				
		Suspension	Heavy Suspension	Tension	Upright Low Duty / Inverted	Jumper Suspension
Insulator unit type no.		U70B	U120B	U120B	U70B	U70B
Dielectric material		porcelain	porcelain	porcelain	porcelain	porcelain
Total creepage per unit	mm					
Spacing	mm					
Overall shed diameter	mm					
Puncture voltage	kV					
Electro-mechanical failing load of unit	kN					
Drawing no. of unit						
Type test certificate no.						
Number of units per string	pcs.	1 x 10	1 x 10	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 with-stand voltage	kV					
• Corona extinction level	kV					

5.6 Spacers and Spacer Dampers

5.6.1 230 kV Line

Parameter	Unit	
Unit weight	kg	
Material	-	
Number of spacer dampers to be used for each phase per span*	pcs.	
Total quantity of spacer dampers for one basic span*	pcs.	

- * 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.

5.6.2 132 kV Line (Not Used)

Parameter	Unit	
Unit weight	kg	
Material	-	
Number of spacer dampers to be used for each phase per span*	pcs.	
Total quantity of spacer dampers for one basic span*	pcs.	

- * 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.

5.7 Vibration Dampers

5.7.1 230 kV Line

Parameter	Unit	
Unit weight of vibration dampers <ul style="list-style-type: none"> for ACSR Mallard for earthwire for OPGW 	kg kg kg	
Number of vibration dampers to be used for ACSR Mallard per standard span	pcs.	
Number of vibration dampers to be used for earthwire per standard span	pcs.	
Number of vibration dampers to be used for OPGW per standard span	pcs.	

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.

5.7.2 132 kV Line

Parameter	Unit	
Unit Weight of Vibration Dampers <ul style="list-style-type: none"> for ACSR Grosbeak for earthwire for OPGW 	kg kg kg	
Number of vibration dampers to be used for ACSR Grosbeak per standard span	pcs.	
Number of vibration dampers to be used for earthwire per standard span	pcs.	
Number of vibration dampers to be used for OPGW per standard span	pcs.	

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.

6. Schedule F: Proposed Subcontractors

The following form shall be filled and attached to the bid. Bidders are free to propose more than one Subcontractor for each item.

Subcontractors

The following Subcontractors are proposed for carrying out the facilities:

Item	Service	Subcontractor's Name and Address	Nationality
1	Design		
2	Civil works		
3	Electrical works / installation, testing and commissioning		
<i>Name of Bidder:</i>			
<i>Signature of Bidder:</i>			