

**Design, Supply, Installation, Testing & Commissioning of Bogura-Kaliakair 400kV Double Circuit  
Transmission Lines on Turnkey Basis(Packge-01, Lot-02)**  
(ICB No.PGCB/EXIM BANK/LOC-2/400kV/TL/BOG-KAL)

**Addendum No. 01**

(Date: July 29, 2020)

Following revisions/changes are made in the Bidding Document which will form part of the Bidding Document:

**Volume 1 of 3**

1. Section 4- Bidding Forms, Clause-6.9: Form EXP-2: Contracts of Similar Size & Nature

(i) Page 4-30

The text that "Description of the similarity in accordance with Criterion 2.4.1 of Section 3" is replaced with the text "Description of the similarity in accordance with Criterion 2.4.2 of Section 3".

2. Section-2: Bid Data Sheet, Page 2-6, Clause 19.6

The text "The unit price quoted by the Bidder shall be fixed" is replaced with the text "The price quoted by the Bidder shall be Adjustable."

3. Section-3: Evaluation and Qualification Criteria, Clause 2.4.2, Page 3-8

The text "Form EXP-1" from the column Submission Requirement is replaced with "Form EXP-2"

4. Section-8: Special Conditions of Contract, Page 8-5, Clause 14 (Taxes and Duties)

The text "Sub-Clause 14.2 is replaced with the following:" is replaced with the text "The following Sub-Clause 14.2 is added:"

5. Section 9: Contract Forms, Appendix-5, Page-9-19

The text "The following Subcontractors and Manufacturers are approved for carrying out the item of the facilities indicated. Where more than one Subcontractor is listed, the Employer is free to choose between them" is replaced with the text "The following Subcontractors and Manufacturers are approved for carrying out the item of the facilities indicated. Where more than one Subcontractor is listed, the Contractor is free to choose between them"

6. Section 9: Contract Forms, Time Schedule, Page-9-18

The text "36 months" is replaced by "30 months".

**Volume 2 of 2**

1. **Section 7. Foundations, Page 7-5, Clause No. 7.1.4.6: River Crossing Foundations**

Clause No. 7.1.4.6: River Crossing Foundations is replaced with the following:

**"7.1.4.6: River Crossing Foundations**

The location of both river crossing tower, anchor tower and any other tower near the river, should be finalized based on hydro and geo-morphological study of the selected rivers (See **APPENDIX 7.A9**). If river crossing tower, anchor tower and any other tower/towers go into the river due to shifting of river in future, than foundation of those towers shall be treated as foundations on midstream of river and foundation of those towers shall be river crossing foundation. If any other type of tower/towers is/are required to be spotted near/parallel to any river, then based on morphological study foundation of those tower/towers shall be treated same as described above.

Foundation of these types of tower shall be pile supported. The pile shall be designed considering an unsupported height equal to depth of river bed from (HFL) plus allowance for scour depth. Skin friction for unsupported height shall be considered zero in calculating the pile capacity in this regard. All required data to calculate the scour depth shall be collected and managed by bidder themselves. Scour depth shall be calculated as per IRC 78 (2014 or latest version) guidelines (**APPENDIX 7.A10**.)

During design of such foundations, ship impact should be considered (**APPENDIX 7.A11**). Bangladesh/International codes in this regard should be followed. If permanent casing is required for pile casting upto any depth, the contractor shall be considered its cost within the quoted price. For any reason, no extra payment shall be made beyond the quoted price of river crossing tower foundation.

Top of chimney of this type of tower shall be at least 450mm above highest flood level. The Contractor has to assess the river erosion and has to perform the foundation works within the quoted price even if the tower location found under water during execution stage."

## 2. Section 7. Foundations

The following Appendixes are added:

### APPENDIX 7.A9: Morphological Study

**FOR THE FOLLOWING RIVERS MORPHOLOGICAL STUDY HAVE TO BE CONDUCTED:**

Name of transmission line	Name of river	Approximate width of river (m)
Bogura-Kaliakoir 400kV TL	Not applicable	Not applicable

### APPENDIX 7.A10: Calculation of Scour Depth

For determining the scouring depth for alluvial river following standard/guideline need to be used:

Name of transmission line	Name of river	Standard/Guideline	Consideration Requirement
Bogura-Kaliakoir 400kV TL	Not applicable	IRC 78 (2014 or latest)	No

### APPENDIX 7.A11: Ship Impact

The requirement of considering ship impact for the foundation design of river crossing towers are as follows:

Name of transmission line	Name of river	Approximate width of river (m)	Ship Impact consideration requirement
Bogura-Kaliakoir 400kV TL	Not applicable	Not applicable	No

**3. Section 9. Insulator**

**Annex 9-2: Electrical & Mechanical Characteristics,  
Table-1 400kV Line (Overland Portion)**

The row "Size of Disc Insulator" is deleted.

**4. Section-9, Insulator, Annex 9-4, Page 9-21 and Annex 9-5, Page 9-21**

Annex 9-4 & Annex 9-5 is replaced with revised Annex 9-4(Rev.1) & Annex 9-5(Rev.1) **[Attachment-2]**

**5. Section-10, Insulator & Conductor Fittings, Annex 10-4, Page 10-32 & Annex 10-5, Page 10-33**

Annex 10-4 & Annex 10-5 is replaced with revised Annex 10-4(Rev.1) & Annex 10-5(Rev.1) **[Attachment-3]**

**6. Section-11, Conductor Annex 11-5, Page 11-33 & Annex 11-6, Page 11-34**

Annex 11-5 & Annex 11-6 is replaced with revised Annex 11-5(Rev.1) & Annex 11-6(Rev.1) **[Attachment-4]**

**Volume 3 of 3**

**1. Price Schedule No.1, Page 1-1 (Item 1.2.12), Price Schedule No.2, Page 2-1, Item (1.2.12), & Price Schedule No.4, Page 4-4 (Item 3.2.12)**

Quantity of the mentioned items shall be "3" instead of "2".

**2. Sub-clause 2.2.1: 400kV Towers-For Quad ACCC Dhaka Conductor (ACSR Finch) equivalent, Page-22**

In the table, column 4D1(Upto 25m extension) is replaced by 4D1(0m to 15m body extension) and column 4D1 (above 15m to 30m body extension) & 4D1 (above 30m to 40m body extension) are added in the table.

**3. Price Schedule No.4, Page 4-(1-3)**

Page no. 4-1, 4-2 & 4-3 are replaced with revised page no. 4-1(Rev.1), 4-2(Rev.1) & 4-3(Rev.1) **[Attachment-1]**

All other terms and conditions of the bidding document shall remain unaltered.

Enclosure: As stated





**Design, Supply, Installation, Testing Commissioning of the Bogura-Kaliakoir 400 kV Double Circuit Transmission Line on turnkey basis  
(Package-1, Lot-2)**

Item	Description	Unit	Quantity	Unit Price1		Total Price1	
				Foreign Currency [USD]	5	Foreign Currency [USD]	6= 4 x 5
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6= 4 x 5</b>		
<b>Schedule No. 4 Installation and Other Services</b>							
<b>1</b>	<b>Survey and soil investigation works-Land Part</b>						
<b>1.1</b>	<b>Survey Work</b>						
<b>1.1.1</b>	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	131				
<b>1.1.2</b>	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses etc. and all other type of damage compensation.	Km	131				
<b>1.2</b>	<b>Geotechnical Investigations incl. taking samples, logging and lab testing</b>						
<b>1.2.1</b>	Boreholes for geotechnical investigation, incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification						
(a)	Level 2	borehole	2				
(b)	Level 4	borehole	NIL				
<b>1.2.2</b>	Soil resistivity tests (one per tower)	unit	349				
<b>2</b>	<b>Foundations for towers including all setting out, Concrete, Reinforcement, Excavation, Pumping, Stub-Setting, Geotechnical Investigation (Level 2), Shuttering, Leveling, Timbering, supply &amp; Installation of foundation steelwork, Earthing Materials, Backfilling, approved Protective Coating &amp; site clearing etc.</b>						
<b>2.1</b>	<b>Tower type "4DL"</b>						
<b>2.1.1.</b>	Pile Foundation for Soil Category-2	per tower	70				
<b>2.1.2.</b>	Pile Foundation for Soil Category-3	per tower	95				
<b>2.1.3.</b>	Pile Foundation for Soil Category-4	per tower	55				
<b>2.1.4.</b>	Pile Foundation (1 meter raised chimney) for any soil category	per tower	15				
<b>2.1.5.</b>	Pile Foundation (2 meter raised chimney) for any soil category	per tower	15				
<b>2.2</b>	<b>Tower type "4D1 (0m to 15m body extension)"</b>						
<b>2.2.1</b>	Pile Foundation for Soil Category-2	per tower	4				
<b>2.2.2</b>	Pile Foundation for Soil Category-3	per tower	8				
<b>2.2.3</b>	Pile Foundation for Soil Category-4	per tower	3				
<b>2.2.4</b>	Pile Foundation (1 meter raised chimney) for any soil category	per tower	2				
<b>2.2.5</b>	Pile Foundation (2 meter raised chimney) for any soil category	per tower	2				
<b>2.3</b>	<b>Tower type "4D1 (above 15m body extension to 30m body extension)"</b>						

Design, Supply, Installation, Testing Commissioning of the Bogura-Kaliakoir 400 kV Double Circuit Transmission Line on turnkey basis  
(Package-1, Lot-2)

Item	Description	Unit	Quantity	Unit Price1	Total Price1
1	2	3	4	5	6= 4 x 5
Schedule No. 4 Installation and Other Services					
2.3.1	Pile Foundation for Soil Category-2	per tower	2		
2.3.2	Pile Foundation for Soil Category-3	per tower	4		
2.3.3	Pile Foundation for Soil Category-4	per tower	1		
2.3.4	Pile Foundation (1 meter raised chimney) for any soil category	per tower	1		
2.3.5	Pile Foundation (2 meter raised chimney) for any soil category	per tower	1		
2.4	Tower type "4D1(above 30m to 40m body extension)"				
2.4.1	Pile Foundation for Soil Category-2	per tower	1		
2.4.2	Pile Foundation for Soil Category-3	per tower	1		
2.4.3	Pile Foundation for Soil Category-4	per tower	1		
2.4.4	Pile Foundation (1 meter raised chimney) for any soil category	per tower	NIL		
2.4.5	Pile Foundation (2 meter raised chimney) for any soil category	per tower	NIL		
2.5	Tower type "4D25"				
2.5.1	Pile Foundation for Soil Category-2	per tower	8		
2.5.2	Pile Foundation for Soil Category-3	per tower	14		
2.5.3	Pile Foundation for Soil Category-4	per tower	5		
2.5.4	Pile Foundation (1 meter raised chimney) for any soil category	per tower	4		
2.5.5	Pile Foundation (2 meter raised chimney) for any soil category	per tower	5		
2.6	Tower type "4D45"				
2.6.1	Pile Foundation for Soil Category-2	per tower	5		
2.6.2	Pile Foundation for Soil Category-3	per tower	8		



Design, Supply, Installation, Testing Commissioning of the Bogura-Kaliakoir 400 kV Double Circuit Transmission Line on turnkey basis  
(Package-1, Lot-2)

Item	Description	Unit	Quantity	Unit Price1		Total Price1	
				Foreign Currency [USD]	5	Foreign Currency [USD]	6= 4 x 5
1	2	3	4	5	6= 4 x 5		
Schedule No. 4 Installation and Other Services							
2.6.3	Pile Foundation for Soil Category-4	per tower	4				
2.6.4	Pile Foundation (1 meter raised chimney) for any soil category	per tower	3				
2.6.5	Pile Foundation (2 meter raised chimney) for any soil category	per tower	2				
2.7	Tower type "4DT6"						
2.7.1	Pile Foundation for Soil Category-2	per tower	2				
2.7.2	Pile Foundation for Soil Category-3	per tower	4				
2.7.3	Pile Foundation for Soil Category-4	per tower	2				
2.7.4	Pile Foundation (1 meter raised chimney) for any soil category	per tower	1				
2.7.5	Pile Foundation (2 meter raised chimney) for any soil category	per tower	1				
3	Erection of 400kV double circuit towers complete with all stubs, nuts, bolts, locking nuts, washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing etc.						
3.1	Tower type "4DL"						
3.1.1	Tower type 4DL+0m	each	70				
3.1.2	Tower type 4DL+1.5 m	each	25				
3.1.3	Tower type 4DL+3 m	each	55				
3.1.4	Tower type 4DL+4.5 m	each	25				

i. **Annex 9-4(Rev.1): Engineering Documents to be Submitted by Contractor**

Clause References are provided below:

Clause Reference	Document Description	Comment
9.4.1	Insulator units - contract drawings	
9.4.3	Installation procedures	Where necessary
9.4.4	Erection - method statement	
9.6.1	Insulator units - type test certificates	If tests waived
9.6.1	Insulator sets - type test certificates	If tests waived
9.6.1	Type test - programme & procedure	
9.6.1	Details of support simulations	
9.6.5	Galvanising, test results	If requested
9.6.5	Ingot zinc certificates	If requested
9.6.6	Material test certificates	If requested
9.6.6	Insulator units - type test results	
9.6.6	Insulator units - sample test results	
9.6.6	Insulator units - routine test results	If requested
9.6.7	Certificates of conformity	
9.6.8	Installation records	If requested

ii. **Annex 9-5(Rev.1): Notification and Hold Points**

Clause References are provided below:

Clause Reference	Notification Point	Hold Point
9.4.1		Contract drawings
9.4.4		Method statement
9.6.1		Insulators - type tests
9.4.4		Type tests - support simulation details
9.6.8	Insulator - sample tests	

**Annex 10-4(Rev.1): Engineering Documents to be Submitted by Contractor**

Clause Reference	Document Description	Comment
10.4.1	Insulator & conductor fittings - contract drawings	
10.4.3	Installation procedures	
10.6.1	Insulator & conductor fittings - type test certificate	If requested
10.6.1	Type test - programme & procedures	
10.6.2.12	Galvanizing test results	If requested
10.6.5	Ingot zinc certificates	If requested
10.6.5	Metallic & bolt/nuts material test certificate	If requested
10.6.5	Insulator & conductor fittings - type test results	
10.6.5	Insulator & conductor fittings - sample test results	
10.6.5	Insulator & conductor fittings - routine test results	If requested
10.6.6	Certificates of conformity	

**Annex 10-5(Rev.1): Notification and Hold Points**

Clause Reference	Notification Points	Hold Points
10.4.1		Contract drawings
10.6.1		Insulator and conductor fittings - type tests
10.6.3	Insulator & conductor fittings - sample tests	





**Annex 11-5(Rev.1): Engineering Documents to be Submitted by Contractor**

Clause Reference	Document Description	Comment
11.2.1	Design of non-standard conductors	
11.6.1	Conductor erection-method statement	
11.6.2	Conductor joint schedule	See also clause 4.7
11.6.5	Inelastic extension -creep calculation	
11.6.6	Sag and tension calculations	See also clause 4.7
11.6.7	Temporary guy - support loading	
11.6.11	Temporary scaffolds - calculations & drawings	
11.6.12	Live line scaffolds - calculation & drawings	
11.7.2	Conductor grease - type test results	
11.7.5	Galvanising test results	If requested
11.7.5	Ingot zinc certificates	If requested
11.7.4	Aluminium clad steel certificates	If requested
11.7.9	Metallic materials - test certificates	
11.7.9	Conductor grease - type test results	
11.7.9	Conductor - sample test results	
11.7.9	Conductor grease - sample test results	
11.7.10	Certificate of conformity	
11.7.15	Bolt tightness	If requested
11.7.18	Final records - SIMM	If requested

**Annex 11-6(Rev.1): Notification and Hold Points**

Clause Reference.	Notification Point	Hold Point
11.2.1		Non-standard conductor
11.6.1		Method statement
11.6.2		Conductor joint schedule
11.6.3		Repair sleeves
11.6.6		Conductor sags & tensions
11.6.9	Conductor sagging	
11.6.11		Temporary scaffolds
11.6.12		Live line scaffolds
11.6.15	Joint in go fold conductors	
11.7.1	Conductor sample tests	
11.7.2		Conductor grease type tests
11.7.13		Joining competence
11.7.17	Final line route inspection	Continuity test