

# POWER GRID COMPANY OF BANGLADESH LIMITED



## **Tender Documents for Procurement of Dhaka and Western Zone Transmission Grid Expansion Project**

### **Design, Supply, Installation, Testing & Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

### **Volume 3 of 3**

Invitation for Bids No. : 27.21.0000.101.07.318.22.5933; October 25, 2022  
OCB No. : PGCB/ADB/3853-BAN/DWZTGEP/400kV&230kV LILO/P1  
Country : People's Republic of Bangladesh

Employer:



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# Schedule A: Introduction and Preamble to the Price and Technical Schedules

## 1. Scope of Works and General Information

### 1.1 General

1.1.1. The extent of supply is described in the following clauses and in the respective sections of the specification. All work not expressly called for in the Specification, but necessary for the completion of the work shall be performed and furnished by the Contractor at no additional cost to the Employer.

1.1.2. The contract shall comprise design, manufacturing, testing, supply, insurance, delivery to site of towers, phase conductors, earthwire, OPGW including all associated fittings, complete insulator sets, phase and earthwire tension and non-tension joints and clamps, vibration dampers, spacer dampers, erection, setting to work, testing and the replacement and/or adjustment of defective material and workmanship for the duration of the warranty period detailed in the "Extent of Supply" and the associated Annex 1-1.

**1.1.3. The contract comprises Design, Supply, Installation, Testing & Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

#### **Design**

1.1.4. The contract comprises of the complete design of transmission lines.

1.1.5. The Contractor has to design one tower of the line mentioned in Volume-2.

1.1.6. Foundation design of all towers shall be done by the Contractor under this Contract. Foundation works for these towers are also included in the scope of this Contract.

#### **Supply, Erection, Testing and Commissioning**

The contract comprises design, supply, installation, testing and commissioning of LILO of Ghorashal-Kaliganj-Purbachal-Bashundhara 400kV double circuit Line at Kaliganj Substation, Connection of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line and Purbachal-Bashundhara 230kV double circuit Line at Purbachal Substation and LILO of Tongi-Ghorashal 230kV double circuit Line at Kaliganj Substation.

## 1.2 Extent of Supply

1.2.1. Providing access to affordable and reliable electricity to all citizens is a national goal of the Government of Bangladesh (GoB). In 1996, the GoB split the transmission segment and formed the Power Grid Company of Bangladesh (PGCB). PGCB is fully responsible for all transmission assets.

1.2.2. Bangladesh is facing chronic power shortages that could undermine its economic sustainability. Inadequate, irregular power and poor quality power supply were identified to be the major constraints for sustaining economic growth and development of the country.

1.2.3. PGCB launched a vast program for the improving and strengthening of its transmission system. The objective is expansion and strengthening of the 230kV & 132kV transmission systems. The project spreads over from Narshingdi, Narayanganj and Dhaka District.

1.2.4. The aim of the system expansion is to contribute to an efficient power transmission in PGCB's transmission system, to eliminate the operational bottlenecks and to provide an adequate infrastructure for future power sector development.

1.2.5. The GoB received from the Asian Development Bank financial assistance to be used for strengthening the transmission system in the country, especially the 230kV & 132kV transmission facilities. ADB will provide a loan, while the remaining costs will be financed from PGCB funds.

1.2.6. Supply, delivery, and construction of transmission line(s) are mentioned in the specification and in **Annex 1-1**.

1.2.7. This specification covers the **following scope of works**:

- a. Detailed survey including route alignment, profiling, tower spotting, optimization of tower locations, soil resistivity measurement & geotechnical investigation (including special foundation locations, viz. pile/well foundation locations)
- b. Check survey shall be conducted to locate tower locations on ground conforming to the approved profile and tower schedule.

The coordinates of all the tower locations shall also be recorded using GPS/DGPS of positional accuracy less than 3m for easy relocating. The position of all tower locations shall be marked in the final digitized route alignment drawing with relative distances from any permanent benchmark area.

The Contractor shall also collect required data at each tower location in respect of soil strata, ground water level, history of water table in adjacent areas/surface water, distance from permanent bench mark (these details to be furnished in a tabulated form) and classify the suitable type of foundation at each tower location based on the data collected at each location and de-tailed soil investigations carried out at selected locations etc.

- c. Fabrication and supply of all types of tower accessories like phase plate, circuit plate (wherever applicable), number plate, danger plate, anti-climbing device, Bird guard, Bird diverter (wherever applicable), ladder (wherever applicable), resting platform (wherever applicable) etc.

PGCB's existing designed towers shall be used except one special tower type "2DT6H" (**to be newly designed**) mentioned in tower chapter. The Employer shall provide structural/erection drawings, available shop drawings(if any) and bill of materials of all types of transmission line towers and their extensions as required to the Contractor after placement of award, in sequence, suiting the project requirement upon written request of the Contractor. However, if the Contractor

needs to prepare any additional structural and shop drawings or make any correction of existing drawings, these have to be prepared by the Contractor without any additional cost. In such case, the Contractor has to submit relevant documents/drawings for approval of the Employer.

- d. Design, fabrication and supply of towers (as applicable), conductors, insulators, earthwire, OPGW, insulator and conductor fittings, earthwire & OPGW accessories,
- e. Classification of foundations for different type of towers and casting of foundation (including special foundation locations, viz. pile/well foundation locations) for towerfootings;
- f. Erection of towers, tower earthing, fixing of insulator strings, stringing of conductors, earthwire, OPGW along with all necessary lineaccessories,
- g. Painting of towers & supply and erection of span markers, obstruction lights (wherever applicable) for aviation requirements (as required)
- h. Testing and commissioning of the erected transmission linesand
- i. Other items not specifically mentioned in this specification and / or the price schedules but required for the successful commissioning of the transmission line, unless specifically excluded in the Specification.

1.2.8. The various items of work are described very briefly in the relevant price schedules. The various items of the Schedule of Prices shall be read in conjunction with the corresponding sections in the Technical Specifications including amendments and, additions, if any. The Bidder's quoted rates shall be based on the description of activities in the Schedule of Prices as well as other necessary operations required to complete the works detailed in these Technical Specifications.

1.2.9. The **unit rates** quoted shall include minor details which are obviously and fairly intended, and which may not have been included in these documents but are essential for the satisfactory completion of the various works.

1.2.10. The unit rate quoted shall be inclusive of all plant equipment, men, material skilled and unskilled labour etc. essential for satisfactory completion of various works.

1.2.11. All **measurements for payment** shall be in S.I. units, lengths shall be measured in meters corrected to two decimal places. Areas shall be computed in square meters & volume in cubic meters rounded off to two decimals.

1.2.12. Bidder shall quote the unit rates for various items of towers as per units mentioned in appropriate Price Schedule. However, payment of these items identified in the price schedules shall be made as follows:

- Towers / poles:
  - Supply items            On supply of respective complete tower/pole
  - Erection items        On supply of respective complete tower/pole
- Foundation items:    On completion of the respective foundation in all respects

1.2.13. All the **raw materials** such as steel, zinc for galvanizing, reinforcement steel, cement, coarse and fine aggregates for tower foundation, coke and salt for tower earthing etc. are included in the Contractor's scope of supply.

1.2.14. Bidders shall also indicate in the offer, the sources from where they propose to procure the fasteners, anti-theft fasteners, step bolts, hangers, D-shackles etc., tower accessories, aviation signal (if required) etc.

1.2.15. The **entire stringing** of conductors and earthwire shall be carried out by tension stringing

technique. The Bidder shall indicate in their offer, the sets of tension stringing equipment he is having in his possession and the sets of stringing equipment he would deploy exclusively for each package, which under no circumstance shall be less than the number and capacity requirement indicated in Qualifying Requirements for Bidder.

1.2.16. In hilly terrain and thick forest or area with site constraints, where deployment of tension stringing machine is not possible, manual stringing may be adopted after getting approval of Employer's site Engineer. The Contractor shall deploy appropriate tools/ equipment / machinery to ensure that the stringing operation is carried out without causing damage to conductor / earthwire/OPGW and conductor / earthwire / OPGW is installed at the prescribed sag-tension as per the approved stringing charts.

### 1.3 Details of Transmission Line Routes and Terrain

1.3.1 The detailed survey shall be carried out using Total stations, DGPS, etc. along the approved route alignment. As an alternative, the Contractor may also use ALTM (Airborne Laser Terrain Modeling) techniques of equal or better accuracy for the detailed survey.

1.3.2 Bidders may, however, visit the line route to acquaint themselves with terrain conditions, approach, / accessibility to the site, salient features of the route and associated details of the proposed transmission lines. Employer may also arrange joint site visit of line route in Bangladesh for all the interested Bidders who intend to participate in the bidding and have purchased the bidding documents.

### 1.4 Location Details and Terminal Points

Please refer to **Annex 1-2** for terminal points.

The Contractor shall have to construct these transmission line(s) completely up to the dead end towers on either end. Stringing shall also be carried out from dead end towers to terminal gantry / towers.

### 1.5 Estimated and Final Quantities

The quantities set out in the schedules are, unless otherwise defined, estimated quantities of the Works required. They are not to be assumed as the actual and final quantities to be executed by the Contractor in fulfillment of his obligations under the contract.

Final quantities are to be established by the Contractor, and agreed upon by the Employer, immediately after signing of the Contract, after the selection of tower positions has been made on completion of the survey of the transmission line routes.

### 1.6 Modifications

The transmission line shall be completely in accordance with the Specification and associated design and general arrangement/outline drawings. Any modifications thereto are subject to written confirmation by the Employer/Engineer.

### 1.7 Terminal Points

The terminal points for the supply and/or installation of the transmission line are defined in **Annex 1-2**.

## 1.8 Programme of Work

- a. Within 4 (four) weeks of signing of the contract, the Contractor shall submit to the Employer for approval 5 (five) copies of a bar chart detailing the plant manufacture, testing, delivery and erection programme (as appropriate) for the complete contractworks.
- b. The bar chart (prepared in MSPP) shall indicate the various phases of work for all appropriate items of the contract, from commencement of the contract to its completion, e.g. design, survey, approval of drawings, ordering of materials, manufacture, testing, delivery, erection and commissioning. The bar chart shall, when appropriate, allow the requisite periods of approval by the Employer, and/or any other regulatory body.
- c. If at any time during the execution of the contract it is found necessary to modify the approved bar chart, the Contractor shall inform the Employer and submit a modified bar chart for approval. Such approval is not deemed consent to any amendments to the contractual completion date(s).
- d. Modifications, which may affect site work and associated local arrangements, must provide a sufficient notice period to allow for any necessary re-arrangements. It should be recognised that where certain power line outages for crossing purposes have been specified, it may not be possible for these to be replanted due to system operational constraints and this should be allowed for in the overall programme.
- e. The Employer intends that access will be given to a reasonable number of sites to provide continuity of work. However, the Contractor shall accommodate reasonable delays in access to some individual sites, which may prevent sequential foundation installation and support erection work being carried out. Provided he has overall continuity of work, this shall not affect the Contractor's programme.

## 1.9 Safety Measures

The Contract Price shall include the cost for all necessary safety and health procedures to be taken by Contractor and Sub-Contractors under the Project, including following safety measures (not limited to):

- The Contractor shall submit to the Project Manager the work program including concrete safety plans to be done by Contractor (and Sub-Contractors) for protection of general public from accidents and for prevention of traffic accident in the project sites.
- "Health & Safety (Accident Prevention) Officer" shall be continuously stationed in the project construction site throughout the construction period.
- In case power shutdown of existing facility of PGCB/PDB/REB is required for Contractor's works, the Contractor shall submit a safety and work plan and request the power outage at an appropriate time, subject to approval of the Project Manager.
- The Contractor shall immediately notify to the Project Manager in case any fatal, major or other accident, which may involve serious injuries, occurs during the period throughout implementation of Project.

## **1.10 Coordination and Cooperation with other Contracts**

- a. The Contractor shall cooperate with the Employer and other contractors to ensure the satisfactory completion of the Project.
- b. The Contractor shall be responsible for design on the Plant interfacing with any items of equipment which will be installed by other contractor(s), when needed.
- c. The Project Manager may call a coordination meeting(s) with other contractors. The Contractor shall dispatch qualified engineer(s) and settle all design parameters, interface conditions and other matters by these coordination meetings. The necessary expenses such as round-trip international air ticket, accommodation, inland travel charge, etc shall be borne by the Contractor, and such a cost shall be deemed to be included in the Contract Price.

## **1.11 Inspection**

Please refer to Clause no 18.1.11 of section 18 of Technical Specification of Bidding Document.

## Annex 1-1: Scope and Extent of Definite Works

### Design, Supply, Installation, Testing & Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)

1. The following transmission lines will be constructed under the above contract:

(i) LILO of Ghorashal-Kaliganj-Purbachal 400kV double circuit transmission line (approx. 1km) in Kaliganj 400/230kV GIS Substation using Quad bundle ACSR Finch Conductor per phase, ACSR Dorking earthwire and ACSR Dorking earthwire equivalent OPGW. Dismantling and by-pass of Ghorashal-Kaliganj-Purbachal 400kV Transmission Line near the Kaliganj substation area.

(ii) The 400kV Ghorashal-Kaliganj-Purbachal double circuit transmission line (approx. 0.5km) shall be connected at 400kV gantry in 400/230/132kV Purbachal GIS substation. Quad bundle ACSR Finch Conductor per phase, ACSR Dorking earthwire and ACSR Dorking earthwire equivalent OPGW shall be used. Dismantling and by-pass of the connection between Ghorashal-Kaliganj-Purbachal 400kV Transmission Line and Purbachal-Bashundahra 230kV Transmission Line near the Purbachal substation area.

(iii) The 230kV Purbachal-Bashundhara (approx. 0.5km) double circuit transmission line shall be connected at 230kV gantry in 400/230/132kV Purbachal GIS substation. Twin bundle ACSR Mallard Conductor per phase, 7x4.0 galvanized steel earthwire and 7x4.0 galvanized steel earthwire equivalent OPGW shall be used. Dismantling and by-pass of the connection between Ghorashal-Kaliganj-Purbachal 400kV Transmission Line and Purbachal-Bashundahra 230kV Transmission Line near the Purbachal substation area

(iv) LILO of Tongi-Ghorashal 230kV double circuit transmission line at Kaliganj Substation (Approx. 3.5km) using single Mallard equivalent ACCC Conductor per phase, two 7x4.0 galvanized steel earthwire equivalent OPGW. Dismantling and by-pass of Tongi-Ghorashal 230kV double circuit transmission line near the Kaliganj substation area.

2. The specification covers **following scope of works**:

a. Detailed survey including route alignment, profiling, tower spotting, optimization of tower locations, soil resistivity measurement & geotechnical investigation (including special foundation locations, viz. pile/well foundation locations, if any).

b. Check survey shall be conducted to locate tower locations on ground conforming to the approved profile and tower schedule.

c. Design, fabrication, testing and supply of all types of transmission line towers including stubs, fasteners, anti-theft fasteners, step bolts, hangers, D-shackles, number plate, danger plate, tower earthing etc.

d. The contract comprises design of new tower type 2QT6H with its all extensions. PGCB's existing design shall be used for all other towers to be used in the lines. The Employer shall provide structural/erection drawings, available shop drawings and available bill of materials of all types of transmission line towers and their extensions as required to the Contractor after placement of award, in sequence, suiting the project requirement upon written request of the Contractor. However, if the Contractor needs to prepare any additional structural and shop drawings or make any correction of existing drawings, these have to be prepared by the Contractor without any additional cost. In such case, the Contractor has to submit relevant documents/drawings for approval of the Employer.

e. Bidders are requested to inspect the available drawings in Design Dept. of PGCB to satisfy them regarding the extent of available drawings. Bidders are required to propose the tower materials from a manufacturer who will use the same material standard as mentioned in the tower drawings.

f. Fabrication, testing and supply of all types of tower accessories such as phase plates, circuit plates (wherever applicable), number plates, danger plates, anti-climbing devices, bird guards, ladders (wherever applicable), resting platforms (wherever applicable), etc.

g. Design, manufacture, testing and supply of conductors, insulators, OPGW, hardware fittings and conductor & OPGW accessories.

h. Design of foundations for different types of towers, testing of foundations and casting of foundations (including special foundation locations, viz. pile/well foundation locations, if any) for tower footings;

i. Erection of towers, tower earthing, fixing of insulator strings, stringing of conductors, OPGW along with all necessary line accessories,

j. Painting of towers & supply and erection of span markers, obstruction lights (wherever applicable) for aviation requirements (as required);

k. Stringing of conductors and earthwires. The entire stringing of conductors and earth wire shall be carried out by tension stringing technique. The Bidder shall indicate in their offer, the sets of tension stringing equipment he is having in his possession and the sets of stringing equipment he would deploy exclusively for the Contract execution, which under no circumstance shall be less than the number and capacity requirement indicated in Qualifying Requirements for Bidder.

l. Testing & commissioning of the erected transmission lines and

Other items not specifically mentioned in this Specification and / or Schedule of prices but are required for the successful commissioning of the transmission line, unless specifically excluded in the Specification.

m. The Contractor is required to arrange any additional special arrangement/work which may require to complete the above works within the specified Completion Time but not expressly mentioned in the specification. The Contractor has to assess such scope and complete the works within the specified Completion Time within the Contract Price.

Major Contract Components:

i. Tower: 400kV double circuit vertical formation lattice steel tower. 230kV double circuit and 230kV four circuit vertical formation lattice steel tower.

ii. Conductor:

LILO of Ghorashal-Kaliganj-Purbachal-Bashundhara 400kV double circuit transmission line at Kaliganj Substation: Quad Bundle ACSR Finch Conductor per phase.

Connection of Ghorashal-Kaliganj-Purbachal 400kV double circuit transmission line at Purbachal Substation (2 Circuits at 400kV Bay): Quad Bundle ACSR Finch Conductor per phase.

Connection of Purbachal-Bashundhara 230kV double circuit transmission line at Purbachal Substation (2 Circuits at 230kV Bay): Twin ACSR Mallard Conductor per phase.

LILO of Tongi-Ghorashal 230kV Transmission Line: Single Mallard equivalent ACCC Conductor per phase.

iii. Earthwire and OPGW:

400kV: ACSR Dorking earthwire and equivalent OPGW.

230kV: 7x4.0 galvanized steel earthwire and equivalent OPGW.

iv. Insulators & Hardware fittings

The scope of works has been described briefly in this section which may not covered all the works to be done under this Contract. Bidders are requested to go through carefully the complete bidding document to understand the detailed scope of works.

It may be mentioned here that, if the contract consists of multiple section/part/line then, in case of non-availability of a particular tower/item for a line section, the Contractor will be allowed to use that particular tower/item from another section without any change in the quoted rate.

## Annex 1-2: Terminal Points

**(i) LILO of Ghorashal-Kaliganj-Purbachal-Bashundhara 400kV double circuit transmission line at Kaliganj Substation :**

Phase conductors and earthwires shall be terminated at the gantry structures of the substations.

OPGW termination boxes shall be installed at the base of the substations gantry structures.

A jumper of sufficient length shall be provided with the slack span to be terminated at the substation entry equipment.

The termination work of the jumper to the substation equipment is **not** scope of this contract.

**(ii) Connection of Ghorashal-Kaliganj-Purbachal 400kV double circuit transmission line at Purbachal Substation (400kV Gantry):**

Phase conductors and earthwires shall be terminated at the gantry structure of the substation at one end and at LILo points for other end.

OPGW termination boxes shall be installed at the base of the substation gantry structures for one end and at LILo point towers for other end.

A jumper of sufficient length shall be provided with the slack span to be terminated at the substation entry equipment.

The termination work of the jumper to the substation equipment is **not** scope of this contract.

**(iii) Connection of Purbachal-Bashundhara 230kV double circuit transmission line at Purbachal Substation (230kV Gantry):**

Phase conductors and earthwires shall be terminated at the gantry structure of the substation at one end and at LILo points for other end.

OPGW termination boxes shall be installed at the base of the substation gantry structures for one end and at LILo point towers for other end.

A jumper of sufficient length shall be provided with the slack span to be terminated at the substation entry equipment.

The termination work of the jumper to the substation equipment is **not** scope of this contract.

**(iv) LILo of Tongi-Ghorashal 230kV double circuit transmission line at Kaliganj Substation**

Phase conductors and earthwires shall be terminated at the gantry structure of the substation at one end and at LILo points for other end.

OPGW termination boxes shall be installed at the base of the substation gantry structures for one end and at LILo point towers for other end.

A jumper of sufficient length shall be provided with the slack span to be terminated at the substation entry equipment.

The termination work of the jumper to the substation equipment is **not** scope of this contract.

# Schedule B: Bid Prices & Schedules

## 1. General

1. The Price Schedules are divided as follows:

Schedule No. 1: Plant and Mandatory Spare Parts Supplied from Abroad  
Schedule No. 2: Plant and Mandatory Spare Parts Supplied from within the Employer's Country  
Schedule No. 3: Design Services  
Schedule No. 4: Installation and Other Services  
Schedule No. 5: Grand Summary  
Schedule No. 6: Recommended Spare Parts

2. The Schedules do not generally give a full description of the plant to be supplied and the services to be performed under each item. Bidders shall be deemed to have read the Employer's Requirements and other sections of the Bidding Document and reviewed the Drawings to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices. The entered rates and prices shall be deemed to cover the full scope as previously mentioned, including overheads and profit.
3. If Bidders are unclear or uncertain as to the scope of any item, they shall seek clarification in accordance with ITB 7 prior to submitting their bid.

## 2. Pricing

4. The units and rates in figures entered into the price schedules should be type written or if written by hand, must be in print form. Price schedules not presented accordingly may be considered nonresponsive. Any alterations necessary due to errors, etc., shall be initialed by the Bidder.

As specified in the bid data sheet and special conditions of contract, prices shall be fixed and firm for the duration of the contract, or prices shall be subject to adjustment in accordance with the corresponding appendix (price adjustment) to the contract agreement.

5. Bid prices shall be quoted in the manner indicated and in the currencies specified in the Instructions to Bidders in the bidding document.

For each item, Bidders shall complete each appropriate column in the respective schedules, giving the price breakdown as indicated in the schedules.

Prices given in the schedules against each item shall be for the scope covered by that item as detailed in Volume II (Employer's Requirements) or elsewhere in the bidding document.

6. Payments will be made to the Contractor in the currency or currencies indicated under each respective item.

7. When requested by the Employer for the purposes of making payments or part payments, valuing variations or evaluating claims, or for such other purposes as the Employer may reasonably require, the Contractor shall provide the Employer with a breakdown of any composite or lump sum items included in the schedules.

### **3. Schedules of Rates and Prices**

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

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

**Schedule No. 3: Design Services**

**Schedule No. 4: Installation and Other Services**

**Schedule No. 5: Grand Summary**

**Schedule No. 6: Recommended Spare Parts**

Please see the separate EXCEL file for the above.

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

**(Price schedules are attached at the end of this document.)**

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

The Bidder shall fill, sign and stamp the attached time schedule and shall attach it to the bid.

Time for completion of the whole facilities shall be **18 (eighteen) months** from the effective date as described in Section 8 - Special Conditions of Contract, Sub-Clause 8.2.

The Bidder shall provide

- filled general time schedule, provided below and as Appendix 4 to the Section 9: Contract Forms,
- a detailed proposal for mobilization schedule, Section 4: Bidding Forms, item 5.3. and
- a detailed proposal for the construction schedule, Section 4: Bidding Forms, item 5.4.

Please find the time schedule attached.

### Time Schedule (Show Activity in Bar Chart for 18 months.)

Work under this contract shall be completed within 18 (eighteen) months from contract effective date.

| Design, Supply, Installation, Testing & Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1) | Duration |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|--|
|                                                                                                                                                                     |          | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| Line Route Survey                                                                                                                                                   |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Geotechnical Investigation                                                                                                                                          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Line Design                                                                                                                                                         |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Approval of the Line Design                                                                                                                                         |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Civil Design                                                                                                                                                        |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Approval of the Civil Design                                                                                                                                        |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Manufacturing of the Towers                                                                                                                                         |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Tower Testing                                                                                                                                                       |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Manufacturing of Conductor, Insulator, Earthwire, OPGW & Accessories                                                                                                |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Testing of Conductor, Insulator, Earthwire, OPGW & Accessories                                                                                                      |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Civil Works                                                                                                                                                         |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Tower Erection                                                                                                                                                      |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Stringing                                                                                                                                                           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |
| Testing & Commissioning                                                                                                                                             |          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |  |

## 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

| Item | Description                            | Manufacturer | Place of Manufacture | Place of Testing and Inspection | Country of Origin |
|------|----------------------------------------|--------------|----------------------|---------------------------------|-------------------|
| 1.   | Tower                                  |              |                      |                                 |                   |
|      | Nuts, bolts, washers etc.              |              |                      |                                 |                   |
| 2.   | Conductor (ACCC)                       |              |                      |                                 |                   |
| 3.   | Conductor (ACSR)                       |              |                      |                                 |                   |
| 4.   | Earthwire                              |              |                      |                                 |                   |
| 5.   | OPGW                                   |              |                      |                                 |                   |
| 6.   | Insulator                              |              |                      |                                 |                   |
| 7.   | Hardware fittings for ACCC & Insulator |              |                      |                                 |                   |
| 8.   | Hardware fittings for ACSR & Insulator |              |                      |                                 |                   |
| 9.   | Hardware fittings for OPGW             |              |                      |                                 |                   |

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

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

# Schedule E: Technical Particulars and Guarantees

## 1. General

The technical data schedules hereafter provide more details on the specific technical criteria and complement the Information given in the bidding document.

They form an essential part of bid submission and will be used in bid evaluation.

They should be fully completed and submitted with the bid.



## 2. Technical Data Schedules

The technical data schedules hereafter provide more details on the specific technical criteria and complement the Information given in the bidding documents.

They form an essential part of bid submission and will be used in bid evaluation.

They should be fully completed and submitted with the bid.

### 2.1 Towers

#### 2.1.1. 400 kV Tower- For Twin ACCC Dhaka Conductor-Not Applicable

Fill out 1 form for each manufacturer

| Parameters                                                        | Unit | Tower Type |     |      |      |      |
|-------------------------------------------------------------------|------|------------|-----|------|------|------|
|                                                                   |      | 4DL        | 4D1 | 4D25 | 4D45 | 4DT6 |
| 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 E20.0 tower*                                | (kg) |            |     |      |      |      |
| Total approx. mass of E25.0 tower*                                | (kg) |            |     |      |      |      |
| Total approx. mass of E30.0 tower*                                | (kg) |            |     |      |      |      |
| Total approx. mass of E40.0 tower*                                | (kg) |            |     |      |      |      |
| Total approx. mass of stub & cleat*                               | (kg) |            |     |      |      |      |
| Approximate ultimate compression load/leg (highest extension)*    | (kN) |            |     |      |      |      |
| Approximate ultimate uplift load/leg (highest extension)*         | (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  |            |       |              |                  |       |              |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer



## 2.1.2. 400 kV Tower-For Quad ACSR Finch Conductor

Fill out 1 form for each manufacturer

| Parameters                                                        | Unit | Tower Type |     |      |      |      |
|-------------------------------------------------------------------|------|------------|-----|------|------|------|
|                                                                   |      | 4DL        | 4D1 | 4D25 | 4D45 | 4DT6 |
| 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 E20.0 tower*                                | (kg) |            |     |      |      |      |
| Total approx. mass of E25.0 tower*                                | (kg) |            |     |      |      |      |
| Total approx. mass of E30.0 tower*                                | (kg) |            |     |      |      |      |
| Total approx. mass of E40.0 tower*                                | (kg) |            |     |      |      |      |
| Total approx. mass of stub & cleat*                               | (kg) |            |     |      |      |      |
| Approximate ultimate compression load/leg (highest extension)*    | (kN) |            |     |      |      |      |
| Approximate ultimate uplift load/leg (highest extension)*         | (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  |            |       |              |                  |       |              |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer



### 2.1.3. 230kV Towers (No need to fill if tower design is provided by the Employer)

Fill out 1 form for each manufacturer

| Parameters                                                        | Unit | Tower Type |     |      |      |     |     |     |      |      |     |      |
|-------------------------------------------------------------------|------|------------|-----|------|------|-----|-----|-----|------|------|-----|------|
|                                                                   |      | 2DL        | 2D1 | 2D25 | 2DT6 | 2D9 | 2QL | 2Q1 | 2Q30 | 2QT6 | 2DR | 2DAX |
| 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.

### 2.1.4. 132kV Towers (No need to fill if tower design is provided by the Employer)

Fill out 1 form for each manufacturer

| Parameters                                                        | Unit | Tower Type |     |      |      |     |      |     |      |      |      |
|-------------------------------------------------------------------|------|------------|-----|------|------|-----|------|-----|------|------|------|
|                                                                   |      | 1DL        | 1D1 | 1D25 | 1DT6 | 1DR | 1DAX | 1QL | 1Q15 | 1Q30 | 1QT6 |
| 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.

## 2.2 Piled Foundation Details

### 2.2.1. 400 kV Towers- For Twin ACCC Dhaka Conductor (ACSR Finch equivalent-**Not Applicable**)

| Tower Type Particulars   | 4DL<br>(Highest extension) | 4D1<br>(Upto 25m extension) | 4D1<br>(above 25m to 40m extension) | 4D25<br>(Highest extension) | 4D45<br>(Highest extension) | 4DT6<br>(Highest extension) | 4DR-Not Required<br>(Highest extension) | 4DAX-Not Required |
|--------------------------|----------------------------|-----------------------------|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------|-------------------|
| Type of piled            |                            |                             |                                     |                             |                             |                             |                                         |                   |
| Number 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.

### 2.2.2. 400 kV Towers (For Quad ACSR Finch Conductor)

| Tower Type Particulars   | 4DL<br>(Highest extension) | 4D1<br>(Upto 25m extension) | 4D1<br>(above 25m to 40m extension) | 4D25<br>(Highest extension) | 4D45<br>(Highest extension) | 4DT6<br>(Highest extension) | 4DR-Not Required<br>(Highest extension) | 4DAX-Not Required |
|--------------------------|----------------------------|-----------------------------|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------|-------------------|
| Type of piled            |                            |                             |                                     |                             |                             |                             |                                         |                   |
| Number 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.

### 2.2.3. 230kV Towers

| Tower Type Particulars   | 2DL<br>(Highest extension) | 2D1<br>(Highest extension) | 2D25<br>(Highest extension) | 2DT6<br>(Highest extension) | 2D9<br>(Highest extension) | 2QL<br>(Highest Extension) | 2Q1<br>(Highest Extension) | 2Q30<br>(Highest Extension) | 2QT6<br>(Highest Extension) | 2DR<br>(Highest Extension) | 2DAX<br>(Highest Extension) |
|--------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|
| Type of piled foundation |                            |                            |                             |                             |                            |                            |                            |                             |                             |                            |                             |
| Number 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.

### 2.2.4. 132kV Towers

| Tower Type Particulars   | 1DL<br>(Highest extension) | 1D1<br>(Highest extension) | 1D25<br>(Highest extension) | 1DT6<br>(Highest extension) | 1DR<br>(Highest extension) | 1DAX<br>(Highest extension) | 1QL<br>(Highest Extension) | 1Q15<br>(Highest Extension) | 1Q30<br>(Highest Extension) | 1QT6<br>(Highest Extension) |
|--------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Type of piled foundation |                            |                            |                             |                             |                            |                             |                            |                             |                             |                             |
| Number 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.

## 2.3 Conductor, Earthwire & OPGW

### 2.3.1 400 kV Line – Twin ACCC Dhaka Conductor (ACSR Finch equivalent-**Not Applicable**)

Fill out 1 form for each manufacturer

| Conductor                                                 | Phase                  |                     | Earthwire              |                     |
|-----------------------------------------------------------|------------------------|---------------------|------------------------|---------------------|
|                                                           | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| Designation<br>(Code Name)                                |                        |                     |                        |                     |
| Type                                                      |                        |                     |                        |                     |
| Reference standards                                       |                        |                     |                        |                     |
| Aluminium/ Aluminium alloy grade                          |                        |                     |                        |                     |
| Steel grade                                               |                        |                     |                        |                     |
| Galvanising Thickness                                     |                        |                     |                        |                     |
| Aluminium class (AS wire)                                 |                        |                     |                        |                     |
| Aluminium type (AS wire)                                  |                        |                     |                        |                     |
| Conductor max. continuous operating temperature (°C)      |                        |                     |                        |                     |
| Minimum mass of grease (kg/km)                            |                        |                     |                        |                     |
| Creep period of conductor to be considered (years)        |                        |                     |                        |                     |
| No. and diameter of aluminium wire (No./mm)               |                        |                     |                        |                     |
| No. and diameter of steel wire (No./mm)                   |                        |                     |                        |                     |
| Overall diameter of conductor (mm)                        |                        |                     |                        |                     |
| Overall sectional area of conductor (mm <sup>2</sup> )    |                        |                     |                        |                     |
| Rated tensile strength of conductor (kN)                  |                        |                     |                        |                     |
| Weight (kg/km)                                            |                        |                     |                        |                     |
| Direction of external lay                                 |                        |                     |                        |                     |
| Cross Sectional Area of Al (mm <sup>2</sup> )             |                        |                     |                        |                     |
| Cross Sectional Area of Composite Core (mm <sup>2</sup> ) |                        |                     |                        |                     |
| No. of Composite Core (mm)                                |                        |                     |                        |                     |
| Shape of wires                                            |                        |                     |                        |                     |
| Diameter of Composite Core (mm)                           |                        |                     |                        |                     |
| Rated tensile strength of core (kN)                       |                        |                     |                        |                     |
| Current carrying capacity at 180 Deg C (amp)              |                        |                     |                        |                     |
| Max. allowable emergency operating temp. (Deg C)          |                        |                     |                        |                     |
| Maximum DC Resistance at 20 Deg C (ohm/km)                |                        |                     |                        |                     |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer



### 2.3.2 400kV Line –Quad ACSR Finch Conductor

| Conductor                                                 | Phase                  |                     | Earthwire              |                     |
|-----------------------------------------------------------|------------------------|---------------------|------------------------|---------------------|
|                                                           | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| Designation<br>(Code Name)                                |                        |                     |                        |                     |
| Type                                                      |                        |                     |                        |                     |
| Reference standards                                       |                        |                     |                        |                     |
| Aluminium/ Aluminium alloy grade                          |                        |                     |                        |                     |
| Steel grade                                               |                        |                     |                        |                     |
| Galvanising Thickness                                     |                        |                     |                        |                     |
| Aluminium class (AS wire)                                 |                        |                     |                        |                     |
| Aluminium type (AS wire)                                  |                        |                     |                        |                     |
| Conductor max. continuous operating temperature (°C)      |                        |                     |                        |                     |
| Minimum mass of grease (kg/km)                            |                        |                     |                        |                     |
| Creep period of conductor to be considered (years)        |                        |                     |                        |                     |
| No. and diameter of aluminium wire (No./mm)               |                        |                     |                        |                     |
| No. and diameter of steel wire (No./mm)                   |                        |                     |                        |                     |
| Overall diameter of conductor (mm)                        |                        |                     |                        |                     |
| Overall sectional area of conductor (mm <sup>2</sup> )    |                        |                     |                        |                     |
| Rated tensile strength of conductor (kN)                  |                        |                     |                        |                     |
| Weight (kg/km)                                            |                        |                     |                        |                     |
| Direction of external lay                                 |                        |                     |                        |                     |
| Cross Sectional Area of Al (mm <sup>2</sup> )             |                        |                     |                        |                     |
| Cross Sectional Area of Composite Core (mm <sup>2</sup> ) |                        |                     |                        |                     |
| No. of Composite Core (mm)                                |                        |                     |                        |                     |
| Shape of wires                                            |                        |                     |                        |                     |
| Diameter of Composite Core (mm)                           |                        |                     |                        |                     |
| Rated tensile strength of core (kN)                       |                        |                     |                        |                     |
| Current carrying capacity at 180 Deg C (amp)              |                        |                     |                        |                     |
| Max. allowable emergency operating temp. (Deg C)          |                        |                     |                        |                     |
| Maximum DC Resistance at 20 Deg C (ohm/km)                |                        |                     |                        |                     |

### 2.3.3 230 kV Line - Overland Portion (Twin ACSR Mallard equivalent ACCC Conductor)

Fill out 1 form for each manufacturer

| Conductor                                                 | Phase                  |                     | Earthwire              |                     |
|-----------------------------------------------------------|------------------------|---------------------|------------------------|---------------------|
|                                                           | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| Designation (Code Name)                                   |                        |                     |                        |                     |
| Type                                                      |                        |                     |                        |                     |
| Reference standards                                       |                        |                     |                        |                     |
| Aluminium/ Aluminium alloy grade                          |                        |                     |                        |                     |
| Steel grade                                               |                        |                     |                        |                     |
| Galvanising Thickness                                     |                        |                     |                        |                     |
| Aluminium class (AS wire)                                 |                        |                     |                        |                     |
| Aluminium type (AS wire)                                  |                        |                     |                        |                     |
| Conductor max. continuous operating temperature (°C)      |                        |                     |                        |                     |
| Minimum mass of grease (kg/km)                            |                        |                     |                        |                     |
| Creep period of conductor to be considered (years)        |                        |                     |                        |                     |
| No. and diameter of aluminium wire (No./mm)               |                        |                     |                        |                     |
| No. and diameter of steel wire (No./mm)                   |                        |                     |                        |                     |
| Overall diameter of conductor (mm)                        |                        |                     |                        |                     |
| Overall sectional area of conductor (mm <sup>2</sup> )    |                        |                     |                        |                     |
| Rated tensile strength of conductor (kN)                  |                        |                     |                        |                     |
| Weight (kg/km)                                            |                        |                     |                        |                     |
| Direction of external lay                                 |                        |                     |                        |                     |
| Cross Sectional Area of Al (mm <sup>2</sup> )             |                        |                     |                        |                     |
| Cross Sectional Area of Composite Core (mm <sup>2</sup> ) |                        |                     |                        |                     |
| No. of Composite Core (mm)                                |                        |                     |                        |                     |
| Shape of wires                                            |                        |                     |                        |                     |
| Diameter of Composite Core (mm)                           |                        |                     |                        |                     |
| Rated tensile strength of core (kN)                       |                        |                     |                        |                     |
| Current carrying capacity at 180 Deg C (amp)              |                        |                     |                        |                     |
| Max. allowable emergency operating temp. (Deg C)          |                        |                     |                        |                     |
| Maximum DC Resistance at 20 Deg C (ohm/km)                |                        |                     |                        |                     |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer



### 2.3.4 230kV Line - (Twin ACSR Mallard Conductor)

Fill out 1 form for each manufacturer

| Conductor                                                 | Phase                  |                     | Earthwire              |                     |
|-----------------------------------------------------------|------------------------|---------------------|------------------------|---------------------|
|                                                           | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| Designation<br>(Code Name)                                |                        |                     |                        |                     |
| Type                                                      |                        |                     |                        |                     |
| Reference standards                                       |                        |                     |                        |                     |
| Aluminium/ Aluminium alloy grade                          |                        |                     |                        |                     |
| Steel grade                                               |                        |                     |                        |                     |
| Galvanising Thickness                                     |                        |                     |                        |                     |
| Aluminium class (AS wire)                                 |                        |                     |                        |                     |
| Aluminium type (AS wire)                                  |                        |                     |                        |                     |
| Conductor max. continuous operating temperature (°C)      |                        |                     |                        |                     |
| Minimum mass of grease (kg/km)                            |                        |                     |                        |                     |
| Creep period of conductor to be considered (years)        |                        |                     |                        |                     |
| No. and diameter of aluminium wire (No./mm)               |                        |                     |                        |                     |
| No. and diameter of steel wire (No./mm)                   |                        |                     |                        |                     |
| Overall diameter of conductor (mm)                        |                        |                     |                        |                     |
| Overall sectional area of conductor (mm <sup>2</sup> )    |                        |                     |                        |                     |
| Rated tensile strength of conductor (kN)                  |                        |                     |                        |                     |
| Weight (kg/km)                                            |                        |                     |                        |                     |
| Direction of external lay                                 |                        |                     |                        |                     |
| Cross Sectional Area of Al (mm <sup>2</sup> )             |                        |                     |                        |                     |
| Cross Sectional Area of Composite Core (mm <sup>2</sup> ) |                        |                     |                        |                     |
| No. of Composite Core (mm)                                |                        |                     |                        |                     |
| Shape of wires                                            |                        |                     |                        |                     |
| Diameter of Composite Core (mm)                           |                        |                     |                        |                     |
| Rated tensile strength of core (kN)                       |                        |                     |                        |                     |
| Current carrying capacity at 180 Deg C (amp)              |                        |                     |                        |                     |
| Max. allowable emergency operating temp. (Deg C)          |                        |                     |                        |                     |
| Maximum DC Resistance at 20 Deg C (ohm/km)                |                        |                     |                        |                     |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer



### 2.3.5 132 kV Line – Overland Portion (ACSR Grosbeak Equivalent ACCC Grosbeak)- Not Applicable

Fill out 1 form for each manufacturer

| Conductor                                                 | Phase                  |                     | Earthwire              |                     |
|-----------------------------------------------------------|------------------------|---------------------|------------------------|---------------------|
|                                                           | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| Designation (Code Name)                                   |                        |                     |                        |                     |
| Type                                                      |                        |                     |                        |                     |
| Reference standards                                       |                        |                     |                        |                     |
| Aluminium/ Aluminium alloy grade                          |                        |                     |                        |                     |
| Steel grade                                               |                        |                     |                        |                     |
| Galvanising Thickness                                     |                        |                     |                        |                     |
| Aluminium class (AS wire)                                 |                        |                     |                        |                     |
| Aluminium type (AS wire)                                  |                        |                     |                        |                     |
| Conductor max. continuous operating temperature (°C)      |                        |                     |                        |                     |
| Minimum mass of grease (kg/km)                            |                        |                     |                        |                     |
| Creep period of conductor to be considered (years)        |                        |                     |                        |                     |
| No. and diameter of aluminium wire (No./mm)               |                        |                     |                        |                     |
| No. and diameter of steel wire (No./mm)                   |                        |                     |                        |                     |
| Overall diameter of conductor (mm)                        |                        |                     |                        |                     |
| Overall sectional area of conductor (mm <sup>2</sup> )    |                        |                     |                        |                     |
| Rated tensile strength of conductor (kN)                  |                        |                     |                        |                     |
| Weight (kg/km)                                            |                        |                     |                        |                     |
| Direction of external lay                                 |                        |                     |                        |                     |
| Cross Sectional Area of Al (mm <sup>2</sup> )             |                        |                     |                        |                     |
| Cross Sectional Area of Composite Core (mm <sup>2</sup> ) |                        |                     |                        |                     |
| No. of Composite Core (mm)                                |                        |                     |                        |                     |
| Shape of wires                                            |                        |                     |                        |                     |
| Diameter of Composite Core (mm)                           |                        |                     |                        |                     |
| Rated tensile strength of core (kN)                       |                        |                     |                        |                     |
| Current carrying capacity at 180 Deg C (amp)              |                        |                     |                        |                     |
| Max. allowable emergency operating temp. (Deg C)          |                        |                     |                        |                     |
| Maximum DC Resistance at 20 Deg C (ohm/km)                |                        |                     |                        |                     |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer



### 2.3.6 132 kV Line – River Crossing Portion (ACSR Grosbeak Equivalent ACCC Grosbeak)-Not Applicable

Fill out 1 form for each manufacturer

| Conductor                                                 | Phase                  |                     | Earthwire              |                     |
|-----------------------------------------------------------|------------------------|---------------------|------------------------|---------------------|
|                                                           | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| Designation (Code Name)                                   |                        |                     |                        |                     |
| Type                                                      |                        |                     |                        |                     |
| Reference standards                                       |                        |                     |                        |                     |
| Aluminium/ Aluminium alloy grade                          |                        |                     |                        |                     |
| Steel grade                                               |                        |                     |                        |                     |
| Galvanising Thickness                                     |                        |                     |                        |                     |
| Aluminium class (AS wire)                                 |                        |                     |                        |                     |
| Aluminium type (AS wire)                                  |                        |                     |                        |                     |
| Conductor max. continuous operating temperature (°C)      |                        |                     |                        |                     |
| Minimum mass of grease (kg/km)                            |                        |                     |                        |                     |
| Creep period of conductor to be considered (years)        |                        |                     |                        |                     |
| No. and diameter of aluminium wire (No./mm)               |                        |                     |                        |                     |
| No. and diameter of steel wire (No./mm)                   |                        |                     |                        |                     |
| Overall diameter of conductor (mm)                        |                        |                     |                        |                     |
| Overall sectional area of conductor (mm <sup>2</sup> )    |                        |                     |                        |                     |
| Rated tensile strength of conductor (kN)                  |                        |                     |                        |                     |
| Weight (kg/km)                                            |                        |                     |                        |                     |
| Direction of external lay                                 |                        |                     |                        |                     |
| Cross Sectional Area of Al (mm <sup>2</sup> )             |                        |                     |                        |                     |
| Cross Sectional Area of Composite Core (mm <sup>2</sup> ) |                        |                     |                        |                     |
| No. of Composite Core (mm)                                |                        |                     |                        |                     |
| Shape of wires                                            |                        |                     |                        |                     |
| Diameter of Composite Core (mm)                           |                        |                     |                        |                     |
| Rated tensile strength of core (kN)                       |                        |                     |                        |                     |
| Current carrying capacity at 180 Deg C (amp)              |                        |                     |                        |                     |
| Max. allowable emergency operating temp. (Deg C)          |                        |                     |                        |                     |
| Maximum DC Resistance at 20 Deg C (ohm/km)                |                        |                     |                        |                     |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

### 2.3.7 132 kV Line –(ACSR Grosbeak)-Not Applicable

Fill out 1 form for each manufacturer

| Conductor                                                 | Phase                  |                     | Earthwire              |                     |
|-----------------------------------------------------------|------------------------|---------------------|------------------------|---------------------|
|                                                           | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| Designation (Code Name)                                   |                        |                     |                        |                     |
| Type                                                      |                        |                     |                        |                     |
| Reference standards                                       |                        |                     |                        |                     |
| Aluminium/ Aluminium alloy grade                          |                        |                     |                        |                     |
| Steel grade                                               |                        |                     |                        |                     |
| Galvanising Thickness                                     |                        |                     |                        |                     |
| Aluminium class (AS wire)                                 |                        |                     |                        |                     |
| Aluminium type (AS wire)                                  |                        |                     |                        |                     |
| Conductor max. continuous operating temperature (°C)      |                        |                     |                        |                     |
| Minimum mass of grease (kg/km)                            |                        |                     |                        |                     |
| Creep period of conductor to be considered (years)        |                        |                     |                        |                     |
| No. and diameter of aluminium wire (No./mm)               |                        |                     |                        |                     |
| No. and diameter of steel wire (No./mm)                   |                        |                     |                        |                     |
| Overall diameter of conductor (mm)                        |                        |                     |                        |                     |
| Overall sectional area of conductor (mm <sup>2</sup> )    |                        |                     |                        |                     |
| Rated tensile strength of conductor (kN)                  |                        |                     |                        |                     |
| Weight (kg/km)                                            |                        |                     |                        |                     |
| Direction of external lay                                 |                        |                     |                        |                     |
| Cross Sectional Area of Al (mm <sup>2</sup> )             |                        |                     |                        |                     |
| Cross Sectional Area of Composite Core (mm <sup>2</sup> ) |                        |                     |                        |                     |
| No. of Composite Core (mm)                                |                        |                     |                        |                     |
| Shape of wires                                            |                        |                     |                        |                     |
| Diameter of Composite Core (mm)                           |                        |                     |                        |                     |
| Rated tensile strength of core (kN)                       |                        |                     |                        |                     |
| Current carrying capacity at 180 Deg C (amp)              |                        |                     |                        |                     |
| Max. allowable emergency operating temp. (Deg C)          |                        |                     |                        |                     |
| Maximum DC Resistance at 20 Deg C (ohm/km)                |                        |                     |                        |                     |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

## 2.4 OPGW & Fittings

### 2.4.1 400kV Line

Fill out 1 form for each manufacturer

| Parameter                                | Unit                | Overland Portion       |                     | River Crossing Portion |                     |
|------------------------------------------|---------------------|------------------------|---------------------|------------------------|---------------------|
|                                          |                     | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| OPGW designation & type                  |                     |                        |                     |                        |                     |
| Number of fibres                         |                     |                        |                     |                        |                     |
| Reference standard                       |                     |                        |                     |                        |                     |
| Number and diameter of aluminium strands | mm                  |                        |                     |                        |                     |
| Number and diameter of steel strands     | mm                  |                        |                     |                        |                     |
| Corrosion protection of steel strands    |                     |                        |                     |                        |                     |
| Internal fibre tube diameter             | mm                  |                        |                     |                        |                     |
| Overall diameter                         | mm                  |                        |                     |                        |                     |
| Guaranteed ultimate tensile strength     | kN                  |                        |                     |                        |                     |
| Final modulus of elasticity              | N/mm <sup>2</sup>   |                        |                     |                        |                     |
| Coefficient of linear expansion          | 1/degree            |                        |                     |                        |                     |
| DC resistance at 20°C                    | ohms/m              |                        |                     |                        |                     |
| Maximum short circuit current capacity   | kA <sup>2</sup> sec |                        |                     |                        |                     |
| Assumed temperature rise                 | °C                  |                        |                     |                        |                     |
| Standard weight                          | kg/m                |                        |                     |                        |                     |
| Weight of grease                         | kg/m                |                        |                     |                        |                     |
| Standard length on drum*                 | m                   |                        |                     |                        |                     |
| Weight of complete drum                  | kg                  |                        |                     |                        |                     |
| Maximum drum length                      | m                   |                        |                     |                        |                     |
| Installation minimum bending radius      | m                   |                        |                     |                        |                     |
| <b>Optical Characteristics:</b>          |                     |                        |                     |                        |                     |
| Cut-off wave length                      | nm                  |                        |                     |                        |                     |
| Attenuation at ..... Nm                  | dB/km               |                        |                     |                        |                     |
| Zero dispersion wave length              | nm                  |                        |                     |                        |                     |
| Chromatic dispersion at ..... nm         | ps/km               |                        |                     |                        |                     |
| Individual splice loss                   | dB                  |                        |                     |                        |                     |
| Bit error rate                           |                     |                        |                     |                        |                     |
| <b>OPGW Fittings:</b>                    |                     |                        |                     |                        |                     |
| Guaranteed ultimate tensile strength     |                     |                        |                     |                        |                     |
|                                          | kN                  |                        |                     |                        |                     |
| • Suspension set                         | kN                  |                        |                     |                        |                     |

| Parameter                           | Unit | Overland Portion       |                     | River Crossing Portion |                     |
|-------------------------------------|------|------------------------|---------------------|------------------------|---------------------|
|                                     |      | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| • Tension set                       |      |                        |                     |                        |                     |
| 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.

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

## 2.4.2 230kV Line

Fill out 1 form for each manufacturer

| Parameter                                | Unit                | Overland Portion       |                     | River Crossing Portion |                     |
|------------------------------------------|---------------------|------------------------|---------------------|------------------------|---------------------|
|                                          |                     | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| OPGW designation & type                  |                     |                        |                     |                        |                     |
| Number of fibres                         |                     |                        |                     |                        |                     |
| Reference standard                       |                     |                        |                     |                        |                     |
| Number and diameter of aluminium strands | mm                  |                        |                     |                        |                     |
| Number and diameter of steel strands     | mm                  |                        |                     |                        |                     |
| Corrosion protection of steel strands    |                     |                        |                     |                        |                     |
| Internal fibre tube diameter             | mm                  |                        |                     |                        |                     |
| Overall diameter                         | mm                  |                        |                     |                        |                     |
| Guaranteed ultimate tensile strength     | kN                  |                        |                     |                        |                     |
| Final modulus of elasticity              | N/mm <sup>2</sup>   |                        |                     |                        |                     |
| Coefficient of linear expansion          | 1/degree            |                        |                     |                        |                     |
| DC resistance at 20°C                    | ohms/m              |                        |                     |                        |                     |
| Maximum short circuit current capacity   | kA <sup>2</sup> sec |                        |                     |                        |                     |
| Assumed temperature rise                 | °C                  |                        |                     |                        |                     |
| Standard weight                          | kg/m                |                        |                     |                        |                     |
| Weight of grease                         | kg/m                |                        |                     |                        |                     |
| Standard length on drum*                 | m                   |                        |                     |                        |                     |
| Weight of complete drum                  | kg                  |                        |                     |                        |                     |
| Maximum drum length                      | m                   |                        |                     |                        |                     |
| Installation minimum bending radius      | m                   |                        |                     |                        |                     |
| <b>Optical Characteristics:</b>          |                     |                        |                     |                        |                     |
| Cut-off wave length                      | nm                  |                        |                     |                        |                     |
| Attenuation at ..... Nm                  | dB/km               |                        |                     |                        |                     |
| Zero dispersion wave length              | nm                  |                        |                     |                        |                     |
| Chromatic dispersion at ..... nm         | ps/km               |                        |                     |                        |                     |
| Individual splice loss                   | dB                  |                        |                     |                        |                     |
| Bit error rate                           |                     |                        |                     |                        |                     |
| <b>OPGW Fittings:</b>                    |                     |                        |                     |                        |                     |
| Guaranteed ultimate tensile strength     | kN                  |                        |                     |                        |                     |
| • Suspension set                         | kN                  |                        |                     |                        |                     |

| Parameter                           | Unit | Overland Portion       |                     | River Crossing Portion |                     |
|-------------------------------------|------|------------------------|---------------------|------------------------|---------------------|
|                                     |      | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| • Tension set                       |      |                        |                     |                        |                     |
| 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.

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

### 2.4.3 132 kV Line-Not Applicable

Fill out 1 form for each manufacturer

| Parameter                                | Unit                | Overland Portion       |                     | River Crossing Portion |                     |
|------------------------------------------|---------------------|------------------------|---------------------|------------------------|---------------------|
|                                          |                     | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| OPGW designation & type                  |                     |                        |                     |                        |                     |
| Number of fibres                         |                     |                        |                     |                        |                     |
| Reference standard                       |                     |                        |                     |                        |                     |
| Number and diameter of aluminium strands | mm                  |                        |                     |                        |                     |
| Number and diameter of steel strands     | mm                  |                        |                     |                        |                     |
| Corrosion protection of steel strands    |                     |                        |                     |                        |                     |
| Internal fibre tube diameter             | mm                  |                        |                     |                        |                     |
| Overall diameter                         | mm                  |                        |                     |                        |                     |
| Guaranteed ultimate tensile strength     | kN                  |                        |                     |                        |                     |
| Final modulus of elasticity              | N/mm <sup>2</sup>   |                        |                     |                        |                     |
| Coefficient of linear expansion          | 1/degree            |                        |                     |                        |                     |
| DC resistance at 20°C                    | ohms/m              |                        |                     |                        |                     |
| Maximum short circuit current capacity   | kA <sup>2</sup> sec |                        |                     |                        |                     |
| Assumed temperature rise                 | °C                  |                        |                     |                        |                     |
| Standard weight                          | kg/m                |                        |                     |                        |                     |
| Weight of grease                         | kg/m                |                        |                     |                        |                     |
| Standard length on drum*                 | m                   |                        |                     |                        |                     |
| Weight of complete drum                  | kg                  |                        |                     |                        |                     |
| Maximum drum length                      | m                   |                        |                     |                        |                     |
| Installation minimum bending radius      | m                   |                        |                     |                        |                     |
| <b>Optical Characteristics:</b>          |                     |                        |                     |                        |                     |
| Cut-off wave length                      | nm                  |                        |                     |                        |                     |
| Attenuation at ..... Nm                  | dB/km               |                        |                     |                        |                     |
| Zero dispersion wave length              | nm                  |                        |                     |                        |                     |
| Chromatic dispersion at ..... nm         | ps/km               |                        |                     |                        |                     |
| Individual splice loss                   | dB                  |                        |                     |                        |                     |
| Bit error rate                           |                     |                        |                     |                        |                     |
| <b>OPGW Fittings:</b>                    |                     |                        |                     |                        |                     |
| Guaranteed ultimate tensile strength     | kN                  |                        |                     |                        |                     |

| Parameter                           | Unit | Overland Portion       |                     | River Crossing Portion |                     |
|-------------------------------------|------|------------------------|---------------------|------------------------|---------------------|
|                                     |      | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
| • Suspension set<br>• Tension set   | kN   |                        |                     |                        |                     |
| Overall length of set               |      |                        |                     |                        |                     |
| • Suspension set                    | mm   |                        |                     |                        |                     |
| • Tension set                       | mm   |                        |                     |                        |                     |
| Mass of set                         |      |                        |                     |                        |                     |
| • Suspension set                    | kg   |                        |                     |                        |                     |
| • Tension set                       | kg   |                        |                     |                        |                     |
| Drawing numbers                     |      |                        |                     |                        |                     |
| Cross section of OPGW               |      |                        |                     |                        |                     |
| Cross section of non-metallic cable |      |                        |                     |                        |                     |
| Joint box                           |      |                        |                     |                        |                     |
| Fixing clamps                       |      |                        |                     |                        |                     |
| OPGW suspension set                 |      |                        |                     |                        |                     |
| OPGW tension set                    |      |                        |                     |                        |                     |
| OPGW vibration damper               |      |                        |                     |                        |                     |

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

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

## 2.5 Insulator Sets & Fittings

### 2.5.1 400kV Line- Twin ACCC Dhaka Conductor-**Not Applicable**

Fill out 1 form for each manufacturer

| Parameter                               | Unit | As per Bid requirement |                  |         |                  |                   | As per Bid Proposal |                  |         |                  |                   |
|-----------------------------------------|------|------------------------|------------------|---------|------------------|-------------------|---------------------|------------------|---------|------------------|-------------------|
|                                         |      | Insulator Set Type     |                  |         |                  |                   |                     |                  |         |                  |                   |
|                                         |      | Suspension             | Heavy Suspension | Tension | Low Duty Tension | Jumper Suspension | Suspension          | Heavy Suspension | Tension | Low Duty Tension | Jumper Suspension |
| Insulator unit type no.                 |      |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| Dielectric material                     |      |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| 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. |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| Total creepage of string                | mm   |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| Overall length of set                   | mm   |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| Sag adjuster type and step              | mm   |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| Ultimate strength of set                | kN   |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| Mass of set                             | kg   |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| Anticipated                             |      |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| • lightning impulse withstand voltage   | kV   |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| • Power frequency withstand voltage     | kV   |                        |                  |         |                  |                   |                     |                  |         |                  |                   |
| • Corona extinction level               | kV   |                        |                  |         |                  |                   |                     |                  |         |                  |                   |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer



## 2.5.2 400kV Line- Quad ACSR Finch Conductor

| Parameter                               | Unit | As per Bid requirement |         | As per Bid Proposal |         |
|-----------------------------------------|------|------------------------|---------|---------------------|---------|
|                                         |      | Insulator Set Type     |         |                     |         |
|                                         |      | Suspension             | Tension | Suspension          | Tension |
| Insulator unit type no.                 |      |                        |         |                     |         |
| Dielectric material                     |      |                        |         |                     |         |
| 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. |                        |         |                     |         |
| Total creepage of string                | mm   |                        |         |                     |         |
| Overall length of set                   | mm   |                        |         |                     |         |
| Sag adjuster type and step              | mm   |                        |         |                     |         |
| Ultimate strength of set                | kN   |                        |         |                     |         |
| Mass of set                             | kg   |                        |         |                     |         |
| Anticipated                             |      |                        |         |                     |         |
| • lightning impulse withstand voltage   | kV   |                        |         |                     |         |
| • Power frequency withstand voltage     | kV   |                        |         |                     |         |
| • Corona extinction level               | kV   |                        |         |                     |         |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

### 2.5.3 230kV Line - Overland Portion (ACSR Twin Mallard equivalent ACCC Conductor)

Fill out 1 form for each manufacturer

| Parameter                               | Unit | As per Bid requirement             |         |                     |                      | As per Bid Proposal                |         |                     |                      |
|-----------------------------------------|------|------------------------------------|---------|---------------------|----------------------|------------------------------------|---------|---------------------|----------------------|
|                                         |      | Insulator Set Type                 |         |                     |                      |                                    |         |                     |                      |
|                                         |      | Suspension/<br>Heavy<br>Suspension | Tension | Low Duty<br>Tension | Jumper<br>Suspension | Suspension/<br>Heavy<br>Suspension | Tension | Low Duty<br>Tension | Jumper<br>Suspension |
| Insulator unit type no.                 |      |                                    |         |                     |                      |                                    |         |                     |                      |
| Dielectric material                     |      |                                    |         |                     |                      |                                    |         |                     |                      |
| 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. |                                    |         |                     |                      |                                    |         |                     |                      |
| Total creepage of string                | mm   |                                    |         |                     |                      |                                    |         |                     |                      |
| Overall length of set                   | mm   |                                    |         |                     |                      |                                    |         |                     |                      |
| Sag adjuster type and step              | mm   |                                    |         |                     |                      |                                    |         |                     |                      |
| Ultimate strength of set                | kN   |                                    |         |                     |                      |                                    |         |                     |                      |
| Mass of set                             | kg   |                                    |         |                     |                      |                                    |         |                     |                      |
| Anticipated                             |      |                                    |         |                     |                      |                                    |         |                     |                      |
| • lightning impulse withstand voltage   | kV   |                                    |         |                     |                      |                                    |         |                     |                      |
| • Power frequency withstand voltage     | kV   |                                    |         |                     |                      |                                    |         |                     |                      |
| • Corona extinction level               | kV   |                                    |         |                     |                      |                                    |         |                     |                      |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer



## 2.5.4 230kV Line – River Crossing Portion (ACSR Twin Mallard equivalent ACCC Conductor)-Not Applicable

Fill out 1 form for each manufacturer

| Parameter                               | Unit | As per Bid requirement |         | As per Bid Proposal |         |
|-----------------------------------------|------|------------------------|---------|---------------------|---------|
|                                         |      | Insulator Set Type     |         |                     |         |
|                                         |      | Suspension             | Tension | Suspension          | Tension |
| Insulator unit type no.                 |      |                        |         |                     |         |
| Dielectric material                     |      |                        |         |                     |         |
| 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. |                        |         |                     |         |
| Total creepage of string                | mm   |                        |         |                     |         |
| Overall length of set                   | mm   |                        |         |                     |         |
| Sag adjuster type and step              | mm   |                        |         |                     |         |
| Ultimate strength of set                | kN   |                        |         |                     |         |
| Mass of set                             | kg   |                        |         |                     |         |
| Anticipated                             |      |                        |         |                     |         |
| • lightning impulse withstand voltage   | kV   |                        |         |                     |         |
| • Power frequency withstand voltage     | kV   |                        |         |                     |         |
| • Corona extinction level               | kV   |                        |         |                     |         |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

## 2.5.5 132kV Line- Overland Portion (ACSR Grosbeak equivalent ACCC Conductor)-Not Applicable

| Parameter                               | Unit | As per Bid requirement |         | As per Bid Proposal |         |
|-----------------------------------------|------|------------------------|---------|---------------------|---------|
|                                         |      | Insulator Set Type     |         |                     |         |
|                                         |      | Suspension             | Tension | Suspension          | Tension |
| Insulator unit type no.                 |      |                        |         |                     |         |
| Dielectric material                     |      |                        |         |                     |         |
| 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. |                        |         |                     |         |
| Total creepage of string                | mm   |                        |         |                     |         |
| Overall length of set                   | mm   |                        |         |                     |         |
| Sag adjuster type and step              | mm   |                        |         |                     |         |
| Ultimate strength of set                | kN   |                        |         |                     |         |
| Mass of set                             | kg   |                        |         |                     |         |
| Anticipated                             |      |                        |         |                     |         |
| • lightning impulse withstand voltage   | kV   |                        |         |                     |         |
| • Power frequency withstand voltage     | kV   |                        |         |                     |         |
| • Corona extinction level               | kV   |                        |         |                     |         |

Name & Signature of  
Manufacturer`s Representative:

Stamp of Manufacturer

## 2.5.6 132kV Line- River Crossing Portion (ACSR Grosbeak equivalent ACCC Conductor)- Not Applicable

| Parameter                               | Unit | As per Bid requirement |         | As per Bid Proposal |         |
|-----------------------------------------|------|------------------------|---------|---------------------|---------|
|                                         |      | Insulator Set Type     |         |                     |         |
|                                         |      | Suspension             | Tension | Suspension          | Tension |
| Insulator unit type no.                 |      |                        |         |                     |         |
| Dielectric material                     |      |                        |         |                     |         |
| 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. |                        |         |                     |         |
| Total creepage of string                | mm   |                        |         |                     |         |
| Overall length of set                   | mm   |                        |         |                     |         |
| Sag adjuster type and step              | mm   |                        |         |                     |         |
| Ultimate strength of set                | kN   |                        |         |                     |         |
| Mass of set                             | kg   |                        |         |                     |         |
| Anticipated                             |      |                        |         |                     |         |
| • lightning impulse withstand voltage   | kV   |                        |         |                     |         |
| • Power frequency withstand voltage     | kV   |                        |         |                     |         |
| • Corona extinction level               | kV   |                        |         |                     |         |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

## 2.5.7 132kV Line- ACSR Grosbeak Conductor-Not Applicable

| Parameter                               | Unit | As per Bid requirement |         | As per Bid Proposal |         |
|-----------------------------------------|------|------------------------|---------|---------------------|---------|
|                                         |      | Insulator Set Type     |         |                     |         |
|                                         |      | Suspension             | Tension | Suspension          | Tension |
| Insulator unit type no.                 |      |                        |         |                     |         |
| Dielectric material                     |      |                        |         |                     |         |
| 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. |                        |         |                     |         |
| Total creepage of string                | mm   |                        |         |                     |         |
| Overall length of set                   | mm   |                        |         |                     |         |
| Sag adjuster type and step              | mm   |                        |         |                     |         |
| Ultimate strength of set                | kN   |                        |         |                     |         |
| Mass of set                             | kg   |                        |         |                     |         |
| Anticipated                             |      |                        |         |                     |         |
| • lightning impulse withstand voltage   | kV   |                        |         |                     |         |
| • Power frequency withstand voltage     | kV   |                        |         |                     |         |
| • Corona extinction level               | kV   |                        |         |                     |         |

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

## 2.6 Spacers and Spacer Dampers

Fill out 1 form for each manufacturer

### **400kV Line:**

| Parameter                                                    | Unit | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
|--------------------------------------------------------------|------|------------------------|---------------------|------------------------|---------------------|
|                                                              |      | Overland               |                     | River Crossing         |                     |
| 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.

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**230kV Line:**

| Parameter                                                    | Unit | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
|--------------------------------------------------------------|------|------------------------|---------------------|------------------------|---------------------|
|                                                              |      | Overland               |                     | River Crossing         |                     |
| 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.

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

## 2.7 Vibration Dampers

Fill out 1 form for each manufacturer

### **230kV Line:**

| Parameter                                                                    | Unit | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
|------------------------------------------------------------------------------|------|------------------------|---------------------|------------------------|---------------------|
|                                                                              |      | Overland               |                     | River Crossing         |                     |
| Unit weight of vibration dampers                                             |      |                        |                     |                        |                     |
| • for phase conductor                                                        | kg   |                        |                     |                        |                     |
| • for earthwire                                                              | kg   |                        |                     |                        |                     |
| • for OPGW                                                                   | kg   |                        |                     |                        |                     |
| Number of vibration dampers to be used for phase conductor 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.

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

### **400kV Line:**

| Parameter                                                                    | Unit | As per Bid requirement | As per Bid Proposal | As per Bid requirement | As per Bid Proposal |
|------------------------------------------------------------------------------|------|------------------------|---------------------|------------------------|---------------------|
|                                                                              |      | Overland               |                     | River Crossing         |                     |
| Unit weight of vibration dampers                                             |      |                        |                     |                        |                     |
| • for phase conductor                                                        | kg   |                        |                     |                        |                     |
| • for earthwire                                                              | kg   |                        |                     |                        |                     |
| • for OPGW                                                                   | kg   |                        |                     |                        |                     |
| Number of vibration dampers to be used for phase conductor 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.

Name & Signature of  
Manufacturer's Representative:

Stamp of Manufacturer

## Attachment- Price Schedule

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**A. LILO of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line at Kaliganj Substation**

| Item                                                                                                                                                                                                                                                               | Description                                                                                                                        | Country of origin <sup>2</sup> | Unit                  | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------|----------|-------------------------|--------------------------|----------------------|
|                                                                                                                                                                                                                                                                    |                                                                                                                                    |                                |                       |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | Local Currency [BDT] |
| 1                                                                                                                                                                                                                                                                  | 2                                                                                                                                  | 3*                             | 4                     | 5        | 6                       | 7= 5 x 6                 | 8                    |
| <b>Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad</b>                                                                                                                                                                                        |                                                                                                                                    |                                |                       |          |                         |                          |                      |
| <b>Supply of 400kV double and 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, earthing, etc.</b> |                                                                                                                                    |                                |                       |          |                         |                          |                      |
| <b>1</b>                                                                                                                                                                                                                                                           | <b>Overland Portion</b>                                                                                                            |                                |                       |          |                         |                          |                      |
| <b>1.1</b>                                                                                                                                                                                                                                                         | <b>Tower type "4DT6"</b>                                                                                                           |                                |                       |          |                         |                          |                      |
| 1.1.1                                                                                                                                                                                                                                                              | Tower type 4DT6+9 m                                                                                                                |                                | each                  | 1        |                         |                          |                      |
| 1.1.2                                                                                                                                                                                                                                                              | Tower type 4DT6+4.5 m                                                                                                              |                                | each                  | 1        |                         |                          |                      |
| <b>1.2</b>                                                                                                                                                                                                                                                         | <b>Tower type "4D25"</b>                                                                                                           |                                |                       |          |                         |                          |                      |
| 1.2.1                                                                                                                                                                                                                                                              | Tower type 4D25 +9 m                                                                                                               |                                | each                  | 1        |                         |                          |                      |
| 1.2.2                                                                                                                                                                                                                                                              | Tower type 4D25 +4.5 m                                                                                                             |                                | each                  | 1        |                         |                          |                      |
| <b>1.3</b>                                                                                                                                                                                                                                                         | Auxiliary crossarm for tower type 4DT6                                                                                             |                                | per set of three      | 2        |                         |                          |                      |
| <b>2</b>                                                                                                                                                                                                                                                           | <b>Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints</b>                                          |                                |                       |          |                         |                          |                      |
| <b>2.1</b>                                                                                                                                                                                                                                                         | <b>Overland Portion</b>                                                                                                            |                                |                       |          |                         |                          |                      |
| 2.1.1                                                                                                                                                                                                                                                              | "ACSR Finch" Phase Conductor (3 Phase, Double Circuit, Quad Bundle per phase on the line)                                          |                                | Route km <sup>3</sup> | 1        |                         |                          |                      |
| 2.1.2                                                                                                                                                                                                                                                              | ACSR Dorking Earthware                                                                                                             |                                | Route km <sup>3</sup> | 1        |                         |                          |                      |
| 2.1.3                                                                                                                                                                                                                                                              | ACSR Dorking Earthware equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. |                                | Route km <sup>3</sup> | 1        |                         |                          |                      |
| <b>3</b>                                                                                                                                                                                                                                                           | <b>Insulator strings, with associated suspension and tension clamps for quad ACSR Finch Conductor</b>                              |                                |                       |          |                         |                          |                      |
| <b>3.1</b>                                                                                                                                                                                                                                                         | <b>Overland Portion</b>                                                                                                            |                                |                       |          |                         |                          |                      |
| 3.1.1                                                                                                                                                                                                                                                              | a) Single suspension string (Heavy Suspension), 210 kN -disc only                                                                  |                                | Set                   | 6        |                         |                          |                      |
|                                                                                                                                                                                                                                                                    | b) Single suspension string (Heavy Suspension), 210 kN -fittings only                                                              |                                | Set                   | 6        |                         |                          |                      |
| 3.1.2                                                                                                                                                                                                                                                              | a) Double tension string, 2x400kN -disc only                                                                                       |                                | Set                   | 36       |                         |                          |                      |
|                                                                                                                                                                                                                                                                    | b) Double tension string, 2x400kN -fittings only                                                                                   |                                | Set                   | 36       |                         |                          |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                                                                                                                                                                                               | Description                                                                                                                                                     | Country of origin <sup>2</sup> | Unit      | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------|----------|-------------------------|--------------------------|----------------------|
|                                                                                                                                                                                                                                                                    |                                                                                                                                                                 |                                |           |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | Local Currency [BDT] |
| 1                                                                                                                                                                                                                                                                  | 2                                                                                                                                                               | 3*                             | 4         | 5        | 6                       | 7= 5 x 6                 | 8                    |
| <b>Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad</b>                                                                                                                                                                                        |                                                                                                                                                                 |                                |           |          |                         |                          |                      |
| <b>Supply of 400kV double and 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, earthing, etc.</b> |                                                                                                                                                                 |                                |           |          |                         |                          |                      |
| 3.1.3                                                                                                                                                                                                                                                              | a) Single jumper suspension I-string, having each string 1x210 kN-disc only                                                                                     |                                | Set       | 6        |                         |                          |                      |
|                                                                                                                                                                                                                                                                    | b) Single jumper suspension I-string, having each string 1x210 kN-fittings only                                                                                 |                                | Set       | 6        |                         |                          |                      |
| 3.1.4                                                                                                                                                                                                                                                              | a) Single tension string, upright low duty 210kN- disc only                                                                                                     |                                | Set       | 12       |                         |                          |                      |
|                                                                                                                                                                                                                                                                    | b) Single tension string, upright low duty 210kN- fittings only                                                                                                 |                                | Set       | 12       |                         |                          |                      |
| 3.1.5                                                                                                                                                                                                                                                              | a) Single tension string, inverted low duty 210kN -discs only                                                                                                   |                                | Set       | 12       |                         |                          |                      |
|                                                                                                                                                                                                                                                                    | b) Single tension string, inverted low duty 210kN -fittings only                                                                                                |                                | Set       | 12       |                         |                          |                      |
| <b>OPGW and earthware sets, complete with all accessories, incl. armour rods and earth bounds</b>                                                                                                                                                                  |                                                                                                                                                                 |                                |           |          |                         |                          |                      |
| 3.1.6                                                                                                                                                                                                                                                              | Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                                                      |                                | set       | 2        |                         |                          |                      |
| 3.1.7                                                                                                                                                                                                                                                              | Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                                                         |                                | set       | 6        |                         |                          |                      |
|                                                                                                                                                                                                                                                                    | <b>Dampers</b>                                                                                                                                                  |                                |           |          |                         |                          |                      |
| 3.1.8                                                                                                                                                                                                                                                              | Vibration damper for phase conductor                                                                                                                            |                                | per span  | 4        |                         |                          |                      |
| 3.1.9                                                                                                                                                                                                                                                              | Spacer damper for phase conductor                                                                                                                               |                                | per span  | 4        |                         |                          |                      |
| 3.1.10                                                                                                                                                                                                                                                             | Vibration damper for OPGW                                                                                                                                       |                                | per span  | 4        |                         |                          |                      |
| 3.1.11                                                                                                                                                                                                                                                             | Spacer for jumper                                                                                                                                               |                                | nos.      | 6        |                         |                          |                      |
| <b>4</b>                                                                                                                                                                                                                                                           | <b>Aerial Markers</b>                                                                                                                                           |                                |           |          |                         |                          |                      |
| 4.1                                                                                                                                                                                                                                                                | Painting of tower having height more than 60 meter in accordance with the requirements of the Technical Specification                                           |                                | per tower | 1        |                         |                          |                      |
| 4.2                                                                                                                                                                                                                                                                | Painting of tower (Reflecting Paint) upto 3 meter in submerge area in accordance with the requirements of the Technical Specification                           |                                | per tower | 1        |                         |                          |                      |
| 4.3                                                                                                                                                                                                                                                                | Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc. |                                | each      | 3        |                         |                          |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                                                                                                                                                                                               | Description                                                                                         | Country of origin <sup>2</sup> | Unit | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-------------------------|--------------------------|----------------------|
|                                                                                                                                                                                                                                                                    |                                                                                                     |                                |      |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | Local Currency [BDT] |
| 1                                                                                                                                                                                                                                                                  | 2                                                                                                   | 3*                             | 4    | 5        | 6                       | 7= 5 x 6                 | 8                    |
| <b>Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad</b>                                                                                                                                                                                        |                                                                                                     |                                |      |          |                         |                          |                      |
| <b>Supply of 400kV double and 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, earthing, etc.</b> |                                                                                                     |                                |      |          |                         |                          |                      |
| 4.4                                                                                                                                                                                                                                                                | Aircraft warning spheres                                                                            |                                | each | 3        |                         |                          |                      |
| 4.5                                                                                                                                                                                                                                                                | Bird diverters                                                                                      |                                | each | 3        |                         |                          |                      |
| 4.6                                                                                                                                                                                                                                                                | Bird guards, one bird guard per each crossarm applied on intermediate towers                        |                                | each | 12       |                         |                          |                      |
| <b>5</b>                                                                                                                                                                                                                                                           | <b>Mandatory Spare Parts and Tools</b>                                                              |                                |      |          |                         |                          |                      |
| <b>5.1</b>                                                                                                                                                                                                                                                         | <b>Tower</b>                                                                                        |                                |      |          |                         |                          |                      |
| 5.1.1                                                                                                                                                                                                                                                              | Galvanized Tower Steel                                                                              |                                |      |          |                         |                          |                      |
| (a)                                                                                                                                                                                                                                                                | Fabricated                                                                                          |                                | ton  | 1        |                         |                          |                      |
| (b)                                                                                                                                                                                                                                                                | Non-fabricated                                                                                      |                                | ton  | 1        |                         |                          |                      |
| <b>5.2</b>                                                                                                                                                                                                                                                         | <b>Insulator and Fittings</b>                                                                       |                                |      |          |                         |                          |                      |
| <b>Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn. Arcing ring etc</b>                                                                                                 |                                                                                                     |                                |      |          |                         |                          |                      |
| <b>Overland Portion</b>                                                                                                                                                                                                                                            |                                                                                                     |                                |      |          |                         |                          |                      |
| 5.2.1                                                                                                                                                                                                                                                              | 210kN single suspension Insulators set (Heavy Suspension) for "Quad ACSR FINCH" - Complete Assembly |                                | set  | 6        |                         |                          |                      |
| 5.2.2                                                                                                                                                                                                                                                              | 210kN jumper suspension set for "Quad ACSR FINCH" - Complete Assembly                               |                                | set  | 2        |                         |                          |                      |
| 5.2.3                                                                                                                                                                                                                                                              | 400kN twin tension set for "Quad ACSR FINCH" - Complete Assembly                                    |                                | set  | 6        |                         |                          |                      |
| <b>5.3</b>                                                                                                                                                                                                                                                         | <b>Phase conductor, earthwire, OPGW &amp; Fittings</b>                                              |                                |      |          |                         |                          |                      |
| 5.3.1                                                                                                                                                                                                                                                              | Midspan Joint for "Quad ACSR FINCH" conductor                                                       |                                | each | 2        |                         |                          |                      |
| 5.3.2                                                                                                                                                                                                                                                              | Repair sleeve for "Quad ACSR FINCH" conductor                                                       |                                | each | 2        |                         |                          |                      |
| 5.3.3                                                                                                                                                                                                                                                              | Spacer Damper for "Quad ACSR FINCH"                                                                 |                                | each | 5        |                         |                          |                      |
| 5.3.4                                                                                                                                                                                                                                                              | Jumper Spacer for "Quad ACSR FINCH"                                                                 |                                | each | 4        |                         |                          |                      |
| 5.3.5                                                                                                                                                                                                                                                              | Suspension set for ACSR Dorking Equivalent OPGW                                                     |                                | each | 3        |                         |                          |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                                                                                                                                                                                               | Description                                                                                                                      | Country of origin <sup>2</sup> | Unit | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-------------------------|--------------------------|----------------------|
|                                                                                                                                                                                                                                                                    |                                                                                                                                  |                                |      |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | Local Currency [BDT] |
| 1                                                                                                                                                                                                                                                                  | 2                                                                                                                                | 3*                             | 4    | 5        | 6                       | 7= 5 x 6                 | 8                    |
| <b>Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad</b>                                                                                                                                                                                        |                                                                                                                                  |                                |      |          |                         |                          |                      |
| <b>Supply of 400kV double and 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, earthing, etc.</b> |                                                                                                                                  |                                |      |          |                         |                          |                      |
| 5.3.6                                                                                                                                                                                                                                                              | Tension set for ACSR Dorking Equivalent OPGW                                                                                     |                                | each | 3        |                         |                          |                      |
| 5.3.7                                                                                                                                                                                                                                                              | Vibration damper for ACSR Dorking Equivalent OPGW                                                                                |                                | each | 3        |                         |                          |                      |
| 5.4                                                                                                                                                                                                                                                                | Temporary earthing equipment                                                                                                     |                                | each | 1        |                         |                          |                      |
| 5.5                                                                                                                                                                                                                                                                | Elcometer                                                                                                                        |                                | each | 1        |                         |                          |                      |
| 5.6                                                                                                                                                                                                                                                                | Motorised jointing compressor for conductor complete with dies suitable for conductors & earthwires to be used for this Contract |                                | each | 1        |                         |                          |                      |
| <b>Total Columns 8 to be carried forward to Schedule No. 5 - Grand Summary</b>                                                                                                                                                                                     |                                                                                                                                  |                                |      |          |                         |                          |                      |

1 Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

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

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.

**Country of Origin Declaration Form**

| Item | Description                                               | Code | Country |
|------|-----------------------------------------------------------|------|---------|
| 1    | Towers                                                    |      |         |
| 2    | Conductor & Earthwire                                     |      |         |
| 3    | Disc Insulator                                            |      |         |
| 4    | Fittings for ACSR / ACCC Conductor, Earthwire & Insulator |      |         |
| 5    | OPGW & its Fittings Accessories                           |      |         |
| 6    | Aviation Equipments                                       |      |         |
| 7    | Design & Engg + Proto Testing of Towers                   |      |         |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**B. Connection of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line and Purbachal-Bashundhara 230kV double circuit Line at Purbachal Substation**

| Item                                                                                                                                                                                                                                                               | Description                                                                                                                        | Country of origin <sup>2</sup> | Unit                  | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------|----------|-------------------------|--------------------------|----------------------|
|                                                                                                                                                                                                                                                                    |                                                                                                                                    |                                |                       |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | Local Currency [BDT] |
| 1                                                                                                                                                                                                                                                                  | 2                                                                                                                                  | 3*                             | 4                     | 5        | 6                       | 7= 5 x 6                 | 8                    |
| <b>Schedule No. 1B Plant and Mandatory Spare Parts Supplied from Abroad</b>                                                                                                                                                                                        |                                                                                                                                    |                                |                       |          |                         |                          |                      |
| <b>Supply of 400kV double and 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, earthing, etc.</b> |                                                                                                                                    |                                |                       |          |                         |                          |                      |
| <b>1</b>                                                                                                                                                                                                                                                           | <b>Overland Portion</b>                                                                                                            |                                |                       |          |                         |                          |                      |
| <b>1.1</b>                                                                                                                                                                                                                                                         | <b>Tower type "4DT6"</b>                                                                                                           |                                |                       |          |                         |                          |                      |
| 1.1.1                                                                                                                                                                                                                                                              | Tower type 4DT6+9 m                                                                                                                |                                | each                  | 1        |                         |                          |                      |
| 1.1.2                                                                                                                                                                                                                                                              | Tower type 4DT6+6 m                                                                                                                |                                | each                  | 1        |                         |                          |                      |
| <b>1.2</b>                                                                                                                                                                                                                                                         | <b>Tower type "2DT6"</b>                                                                                                           |                                |                       |          |                         |                          |                      |
| 1.2.1                                                                                                                                                                                                                                                              | Tower type 2DT6 +9 m                                                                                                               |                                | each                  | 1        |                         |                          |                      |
| 1.2.2                                                                                                                                                                                                                                                              | Tower type 2DT6 +15 m                                                                                                              |                                | each                  | 1        |                         |                          |                      |
| 1.3                                                                                                                                                                                                                                                                | Auxiliary crossarm for tower type 2DT6                                                                                             |                                | per set of three      | 1        |                         |                          |                      |
| 1.4                                                                                                                                                                                                                                                                | Auxiliary crossarm for tower type 4DT6                                                                                             |                                | per set of three      | 1        |                         |                          |                      |
| <b>2</b>                                                                                                                                                                                                                                                           | <b>Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints</b>                                          |                                |                       |          |                         |                          |                      |
| <b>2.1</b>                                                                                                                                                                                                                                                         | <b>Overland Portion</b>                                                                                                            |                                |                       |          |                         |                          |                      |
| 2.1.1                                                                                                                                                                                                                                                              | "ACSR Finch" Phase Conductor (3 Phase, Double Circuit, Quad Bundle per phase on the line)                                          |                                | Route km <sup>3</sup> | 0.5      |                         |                          |                      |
| 2.1.2                                                                                                                                                                                                                                                              | "ACSR Mallard" Phase Conductor (3 Phase, Double Circuit, Twin Bundle per phase on the line)                                        |                                | Route km <sup>3</sup> | 0.5      |                         |                          |                      |
| 2.1.3                                                                                                                                                                                                                                                              | ACSR Dorking Earthware                                                                                                             |                                | Route km <sup>3</sup> | 0.5      |                         |                          |                      |
| 2.1.4                                                                                                                                                                                                                                                              | ACSR Dorking Earthware equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. |                                | Route km <sup>3</sup> | 0.5      |                         |                          |                      |
| 2.1.5                                                                                                                                                                                                                                                              | 7X4.0 GS earthware                                                                                                                 |                                | Route km <sup>3</sup> | 0.5      |                         |                          |                      |
| 2.1.6                                                                                                                                                                                                                                                              | 7X4.0 GS earthware equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes.     |                                | Route km <sup>3</sup> | 0.5      |                         |                          |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                              | Description                                                                                                            | Country of origin <sup>2</sup> | Unit | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties     |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-------------------------|--------------------------|----------------------|
|                                                                                                   |                                                                                                                        |                                |      |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | Local Currency [BDT] |
| 1                                                                                                 | 2                                                                                                                      | 3*                             | 4    | 5        | 6                       | 7= 5 x 6                 | 8                    |
| <b>Schedule No. 1B Plant and Mandatory Spare Parts Supplied from Abroad</b>                       |                                                                                                                        |                                |      |          |                         |                          |                      |
| <b>3</b>                                                                                          | <b>Insulator strings, with associated suspension and tension clamps for quad ACSR Finch and ACSR Mallard Conductor</b> |                                |      |          |                         |                          |                      |
| <b>3.1</b>                                                                                        | <b>Overland Portion</b>                                                                                                |                                |      |          |                         |                          |                      |
| 3.1.1                                                                                             | a) Single suspension string (Heavy Suspension), 120 kN -disc only                                                      |                                | Set  | 1        |                         |                          |                      |
|                                                                                                   | b) Single suspension string (Heavy Suspension), 120 kN -fittings only                                                  |                                | Set  | 1        |                         |                          |                      |
| 3.1.2                                                                                             | a) Single suspension string (Heavy Suspension), 210 kN -disc only                                                      |                                | Set  | 1        |                         |                          |                      |
|                                                                                                   | b) Single suspension string (Heavy Suspension), 210 kN -fittings only                                                  |                                | Set  | 1        |                         |                          |                      |
| 3.1.3                                                                                             | a) Double tension string, 2x210kN -disc only                                                                           |                                | Set  | 24       |                         |                          |                      |
|                                                                                                   | b) Double tension string, 2x210kN -fittings only                                                                       |                                | Set  | 24       |                         |                          |                      |
| 3.1.4                                                                                             | a) Double tension string, 2x400kN -disc only                                                                           |                                | Set  | 24       |                         |                          |                      |
|                                                                                                   | b) Double tension string, 2x400kN -fittings only                                                                       |                                | Set  | 24       |                         |                          |                      |
| 3.1.5                                                                                             | a) Single jumper suspension I-string, having each string 1x210 kN-disc only                                            |                                | Set  | 6        |                         |                          |                      |
|                                                                                                   | b) Single jumper suspension I-string, having each string 1x210 kN-fittings only                                        |                                | Set  | 6        |                         |                          |                      |
| 3.1.6                                                                                             | a) Single tension string, upright low duty 210kN- disc only                                                            |                                | Set  | 12       |                         |                          |                      |
|                                                                                                   | b) Single tension string, upright low duty 210kN- fittings only                                                        |                                | Set  | 12       |                         |                          |                      |
| 3.1.7                                                                                             | a) Single tension string, inverted low duty 210kN -discs only                                                          |                                | Set  | 12       |                         |                          |                      |
|                                                                                                   | b) Single tension string, inverted low duty 210kN -fittings only                                                       |                                | Set  | 12       |                         |                          |                      |
| <b>OPGW and earthware sets, complete with all accessories, incl. armour rods and earth bounds</b> |                                                                                                                        |                                |      |          |                         |                          |                      |
| 3.1.6                                                                                             | Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)             |                                | set  | 2        |                         |                          |                      |
| 3.1.7                                                                                             | Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                |                                | set  | 6        |                         |                          |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                        | Description                                                                                                                                                        | Country of origin <sup>2</sup> | Unit      | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties     |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------|----------|-------------------------|--------------------------|----------------------|
|                                                                             |                                                                                                                                                                    |                                |           |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | Local Currency [BDT] |
| 1                                                                           | 2                                                                                                                                                                  | 3*                             | 4         | 5        | 6                       | 7= 5 x 6                 | 8                    |
| <b>Schedule No. 1B Plant and Mandatory Spare Parts Supplied from Abroad</b> |                                                                                                                                                                    |                                |           |          |                         |                          |                      |
|                                                                             | <b>Dampers</b>                                                                                                                                                     |                                |           |          |                         |                          |                      |
| 3.1.8                                                                       | Vibration damper for phase conductor                                                                                                                               |                                | per span  | 4        |                         |                          |                      |
| 3.1.9                                                                       | Spacer damper for phase conductor                                                                                                                                  |                                | per span  | 4        |                         |                          |                      |
| 3.1.10                                                                      | Vibration damper for OPGW                                                                                                                                          |                                | per span  | 4        |                         |                          |                      |
| 3.1.11                                                                      | Spacer for jumper                                                                                                                                                  |                                | nos.      | 6        |                         |                          |                      |
| <b>4</b>                                                                    | <b>Aerial Markers</b>                                                                                                                                              |                                |           |          |                         |                          |                      |
| 4.1                                                                         | Painting of tower having height more than 60 meter in accordance with the requirements of the Technical Specification                                              |                                | per tower | 1        |                         |                          |                      |
| 4.2                                                                         | Painting of tower (Reflecting Paint) upto 3 meter in submerge area in accordance with the requirements of the Technical Specification                              |                                | per tower | 1        |                         |                          |                      |
| 4.3                                                                         | Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc.    |                                | each      | 3        |                         |                          |                      |
| 4.4                                                                         | Aircraft warning spheres                                                                                                                                           |                                | each      | 3        |                         |                          |                      |
| 4.5                                                                         | Bird diverters                                                                                                                                                     |                                | each      | 3        |                         |                          |                      |
| 4.6                                                                         | Bird guards, one bird guard per each crossarm applied on intermediate towers                                                                                       |                                | each      | 12       |                         |                          |                      |
| <b>5</b>                                                                    | <b>Mandatory Spare Parts and Tools</b>                                                                                                                             |                                |           |          |                         |                          |                      |
| <b>5.1</b>                                                                  | <b>Tower</b>                                                                                                                                                       |                                |           |          |                         |                          |                      |
| 5.1.1                                                                       | Galvanized Tower Steel                                                                                                                                             |                                |           |          |                         |                          |                      |
| (a)                                                                         | Fabricated                                                                                                                                                         |                                | ton       | 1        |                         |                          |                      |
| (b)                                                                         | Non-fabricated                                                                                                                                                     |                                | ton       | 1        |                         |                          |                      |
| <b>5.2</b>                                                                  | <b>Insulator and Fittings</b>                                                                                                                                      |                                |           |          |                         |                          |                      |
|                                                                             | <b>Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn. Arcing ring etc</b> |                                |           |          |                         |                          |                      |
|                                                                             | <b>Overland Portion</b>                                                                                                                                            |                                |           |          |                         |                          |                      |
| 5.2.1                                                                       | 210kN twin tension set for "Twin ACSR Mallard" - Complete Assembly                                                                                                 |                                | set       | 6        |                         |                          |                      |
| <b>5.3</b>                                                                  | <b>Phase conductor, earthwire, OPGW &amp; Fittings</b>                                                                                                             |                                |           |          |                         |                          |                      |
| 5.3.1                                                                       | Midspan Joint for "Twin ACSR Mallard" conductor                                                                                                                    |                                | each      | 2        |                         |                          |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                           | Description                                                                                                                                 | Country of origin <sup>2</sup> | Unit | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties     |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-------------------------|--------------------------|----------------------|
|                                                                                |                                                                                                                                             |                                |      |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | Local Currency [BDT] |
| 1                                                                              | 2                                                                                                                                           | 3*                             | 4    | 5        | 6                       | 7= 5 x 6                 | 8                    |
| <b>Schedule No. 1B Plant and Mandatory Spare Parts Supplied from Abroad</b>    |                                                                                                                                             |                                |      |          |                         |                          |                      |
| 5.3.2                                                                          | Repair sleeve for "Twin ACSR Mallard" conductor                                                                                             |                                | each | 2        |                         |                          |                      |
| 5.3.3                                                                          | Spacer Damper for "Twin ACSR Mallard"                                                                                                       |                                | each | 5        |                         |                          |                      |
| 5.3.4                                                                          | Jumper Spacer for "Twin ACSR Mallard"                                                                                                       |                                | each | 4        |                         |                          |                      |
| 5.3.5                                                                          | Suspension set for 7X4.0 GS earthware Equivalent OPGW                                                                                       |                                | each | 3        |                         |                          |                      |
| 5.3.6                                                                          | Tension set for 7X4.0 GS earthware Equivalent OPGW                                                                                          |                                | each | 3        |                         |                          |                      |
| 5.3.7                                                                          | Vibration damper for 7X4.0 GS earthware Equivalent OPGW                                                                                     |                                | each | 3        |                         |                          |                      |
| <b>5.4</b>                                                                     | <b>Temporary earthing equipment</b>                                                                                                         |                                | each | 1        |                         |                          |                      |
| <b>5.5</b>                                                                     | <b>Elcometer</b>                                                                                                                            |                                | each | 1        |                         |                          |                      |
| <b>5.6</b>                                                                     | <b>Motorised jointing compressor for conductor complete with dies suitable for conductors &amp; earthwires to be used for this Contract</b> |                                | each | 1        |                         |                          |                      |
| <b>Total Columns 8 to be carried forward to Schedule No. 5 - Grand Summary</b> |                                                                                                                                             |                                |      |          |                         |                          |                      |

1 Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

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

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.

**Country of Origin Declaration Form**

| Item | Description                                               | Code | Country |
|------|-----------------------------------------------------------|------|---------|
| 1    | Towers                                                    |      |         |
| 2    | Conductor & Earthwire                                     |      |         |
| 3    | Disc Insulator                                            |      |         |
| 4    | Fittings for ACSR / ACCC Conductor, Earthwire & Insulator |      |         |
| 5    | OPGW & its Fittings Accessories                           |      |         |
| 6    | Aviation Equipments                                       |      |         |
| 7    | Design & Engg + Proto Testing of Towers                   |      |         |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**C. LILO of Tongi-Ghorashal 230kV double circuit Line at Kaliganj Substation**

| Item                                                                                                                                                                                                                                                                | Description                                  | Country of origin <sup>2</sup> | Unit             | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------|------------------|----------|-------------------------|--------------------------|------------------|
|                                                                                                                                                                                                                                                                     |                                              |                                |                  |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   |                  |
| 1                                                                                                                                                                                                                                                                   | 2                                            | 3*                             | 4                | 5        | 6                       | 7= 5 x 6                 | 8                |
| <b>Schedule No. 1C Plant and Mandatory Spare Parts Supplied from Abroad</b>                                                                                                                                                                                         |                                              |                                |                  |          |                         |                          |                  |
| <b>Supply of 230 kV double and 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, earthing, etc.</b> |                                              |                                |                  |          |                         |                          |                  |
| <b>1</b>                                                                                                                                                                                                                                                            | <b>Overland Portion</b>                      |                                |                  |          |                         |                          |                  |
| <b>1.1</b>                                                                                                                                                                                                                                                          | <b>Tower type "2DT6"</b>                     |                                |                  |          |                         |                          |                  |
| 1.1.1                                                                                                                                                                                                                                                               | Tower type 2DT6+6 m                          |                                | each             | 1        |                         |                          |                  |
| 1.1.2                                                                                                                                                                                                                                                               | Tower type 2DT6+15 m                         |                                | each             | 1        |                         |                          |                  |
| <b>1.2</b>                                                                                                                                                                                                                                                          | <b>Tower type "2QL"</b>                      |                                |                  |          |                         |                          |                  |
| 1.2.1                                                                                                                                                                                                                                                               | Tower type 2Q1 +15 m                         |                                | each             | 1        |                         |                          |                  |
| 1.2.2                                                                                                                                                                                                                                                               | Tower type 2Q1 +21 m                         |                                | each             | 1        |                         |                          |                  |
| <b>1.3</b>                                                                                                                                                                                                                                                          | <b>Tower type "2Q1"</b>                      |                                |                  |          |                         |                          |                  |
| 1.3.1                                                                                                                                                                                                                                                               | Tower type 2Q1 +15 m                         |                                | each             | 1        |                         |                          |                  |
| 1.3.2                                                                                                                                                                                                                                                               | Tower type 2Q1 +21 m                         |                                | each             | 1        |                         |                          |                  |
| <b>1.4</b>                                                                                                                                                                                                                                                          | <b>Tower type "2Q15"</b>                     |                                |                  |          |                         |                          |                  |
| 1.4.1                                                                                                                                                                                                                                                               | Tower type 2Q15+ 6 m                         |                                | each             | 1        |                         |                          |                  |
| 1.4.2                                                                                                                                                                                                                                                               | Tower type 2Q15+ 9 m                         |                                | each             | 1        |                         |                          |                  |
| <b>1.5</b>                                                                                                                                                                                                                                                          | <b>Tower type "2Q30"</b>                     |                                |                  |          |                         |                          |                  |
| 1.5.1                                                                                                                                                                                                                                                               | Tower type 2Q30+ 6 m                         |                                | each             | 1        |                         |                          |                  |
| 1.5.2                                                                                                                                                                                                                                                               | Tower type 2Q30+ 9 m                         |                                | each             | 1        |                         |                          |                  |
| <b>1.6</b>                                                                                                                                                                                                                                                          | <b>Tower type "2QT6"</b>                     |                                |                  |          |                         |                          |                  |
| 1.6.1                                                                                                                                                                                                                                                               | Tower type 2QT6+ 6 m                         |                                | each             | 1        |                         |                          |                  |
| 1.6.2                                                                                                                                                                                                                                                               | Tower type 2QT6+ 9 m                         |                                | each             | 1        |                         |                          |                  |
| <b>1.7</b>                                                                                                                                                                                                                                                          | <b>Tower type "2QT6H" with any Extension</b> |                                | each             | 2        |                         |                          |                  |
| <b>1.8</b>                                                                                                                                                                                                                                                          | Auxiliary crossarm for tower type 2QT6       |                                | per set of three | 4        |                         |                          |                  |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                | Description                                                                                                                                          | Country of origin <sup>2</sup> | Unit                  | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------|----------|-------------------------|--------------------------|------------------|
|                                                                                     |                                                                                                                                                      |                                |                       |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | .                |
| 1                                                                                   | 2                                                                                                                                                    | 3*                             | 4                     | 5        | 6                       | 7= 5 x 6                 | 8                |
| <b>Schedule No. 1C Plant and Mandatory Spare Parts Supplied from Abroad</b>         |                                                                                                                                                      |                                |                       |          |                         |                          |                  |
| <b>2</b>                                                                            | <b>Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints</b>                                                            |                                |                       |          |                         |                          |                  |
| <b>2.1</b>                                                                          | <b>Overland Portion</b>                                                                                                                              |                                |                       |          |                         |                          |                  |
| 2.1.1                                                                               | "ACSR Mallard equivalent ACCC" Phase Conductor (3 Phase, Four Circuit, Twin Bundle per phase on the line)                                            |                                | Route km <sup>3</sup> | 3.5      |                         |                          |                  |
| 2.1.2                                                                               | 7x4.00mm equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. Two OPGW earthwire on the line. |                                | Route km <sup>3</sup> | 3.5      |                         |                          |                  |
| <b>3</b>                                                                            | <b>Insulator strings, with associated suspension and tension clamps for twin ACSR Mallard equivalent ACCC Conductor</b>                              |                                |                       |          |                         |                          |                  |
| <b>3.1</b>                                                                          | <b>Overland Portion</b>                                                                                                                              |                                |                       |          |                         |                          |                  |
| 3.1.1                                                                               | a) Single suspension string (Heavy Suspension), 210 kN -disc only                                                                                    |                                | Set                   | 6        |                         |                          |                  |
|                                                                                     | a) Single suspension string (Heavy Suspension), 210 kN -fittings only                                                                                |                                | Set                   | 6        |                         |                          |                  |
| 3.1.2                                                                               | a) Double tension string, 2x210kN -disc only                                                                                                         |                                | Set                   | 240      |                         |                          |                  |
|                                                                                     | b) Double tension string, 2x210kN -fittings only                                                                                                     |                                | Set                   | 240      |                         |                          |                  |
| 3.1.3                                                                               | a) Single jumper suspension I-string, having each string 1x120 kN-disc only                                                                          |                                | Set                   | 6        |                         |                          |                  |
|                                                                                     | b) Single jumper suspension I-string, having each string 1x120 kN-fittings only                                                                      |                                | Set                   | 6        |                         |                          |                  |
| 3.1.4                                                                               | a) Single tension string, upright low duty 120kN- disc only                                                                                          |                                | Set                   | 12       |                         |                          |                  |
|                                                                                     | b) Single tension string, upright low duty 120kN- fittings only                                                                                      |                                | Set                   | 12       |                         |                          |                  |
| 3.1.5                                                                               | a) Single tension string, inverted low duty 120kN -discs only                                                                                        |                                | Set                   | 12       |                         |                          |                  |
|                                                                                     | b) Single tension string, inverted low duty 120kN -fittings only                                                                                     |                                | Set                   | 12       |                         |                          |                  |
| <b>OPGW sets, complete with all accessories, incl. armour rods and earth bounds</b> |                                                                                                                                                      |                                |                       |          |                         |                          |                  |
| 3.1.6                                                                               | Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                                           |                                | set                   | 4        |                         |                          |                  |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                        | Description                                                                                                                                                     | Country of origin <sup>2</sup> | Unit      | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------|----------|-------------------------|--------------------------|------------------|
|                                                                             |                                                                                                                                                                 |                                |           |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | .                |
| 1                                                                           | 2                                                                                                                                                               | 3*                             | 4         | 5        | 6                       | 7= 5 x 6                 | 8                |
| <b>Schedule No. 1C Plant and Mandatory Spare Parts Supplied from Abroad</b> |                                                                                                                                                                 |                                |           |          |                         |                          |                  |
| 3.1.7                                                                       | Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                                                         |                                | set       | 20       |                         |                          |                  |
|                                                                             | <b>Dampers</b>                                                                                                                                                  |                                |           |          |                         |                          |                  |
| 3.1.8                                                                       | Vibration damper for phase conductor                                                                                                                            |                                | per span  | 14       |                         |                          |                  |
| 3.1.9                                                                       | Spacer damper for phase conductor                                                                                                                               |                                | per span  | 14       |                         |                          |                  |
| 3.1.10                                                                      | Vibration damper for OPGW                                                                                                                                       |                                | per span  | 14       |                         |                          |                  |
| 3.1.11                                                                      | Spacer for jumper                                                                                                                                               |                                | nos.      | 36       |                         |                          |                  |
| <b>4</b>                                                                    | <b>Aerial Markers</b>                                                                                                                                           |                                |           |          |                         |                          |                  |
| 4.1                                                                         | Painting of tower having height more than 60 meter in accordance with the requirements of the Technical Specification                                           |                                | per tower | 1        |                         |                          |                  |
| 4.2                                                                         | Painting of tower (Reflecting Paint) upto 3 meter in submerge area in accordance with the requirements of the Technical Specification                           |                                | per tower | 1        |                         |                          |                  |
| 4.3                                                                         | Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc. |                                | each      | 3        |                         |                          |                  |
| 4.4                                                                         | Aircraft warning spheres                                                                                                                                        |                                | each      | 3        |                         |                          |                  |
| 4.5                                                                         | Bird diverters                                                                                                                                                  |                                | each      | 3        |                         |                          |                  |
| 4.6                                                                         | Bird guards, one bird guard per each crossarm applied on intermediate towers                                                                                    |                                | each      | 12       |                         |                          |                  |
| <b>5</b>                                                                    | <b>Mandatory Spare Parts and Tools</b>                                                                                                                          |                                |           |          |                         |                          |                  |
| <b>5.1</b>                                                                  | <b>Tower</b>                                                                                                                                                    |                                |           |          |                         |                          |                  |
| 5.1.1                                                                       | Galvanized Tower Steel                                                                                                                                          |                                |           |          |                         |                          |                  |
| (a)                                                                         | Fabricated                                                                                                                                                      |                                | ton       | 5        |                         |                          |                  |
| (b)                                                                         | Non-fabricated                                                                                                                                                  |                                | ton       | 5        |                         |                          |                  |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                        | Description                                                                                                                                                        | Country of origin <sup>2</sup> | Unit | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-------------------------|--------------------------|------------------|
|                                                                             |                                                                                                                                                                    |                                |      |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | .                |
| 1                                                                           | 2                                                                                                                                                                  | 3*                             | 4    | 5        | 6                       | 7= 5 x 6                 | 8                |
| <b>Schedule No. 1C Plant and Mandatory Spare Parts Supplied from Abroad</b> |                                                                                                                                                                    |                                |      |          |                         |                          |                  |
| <b>5.2</b>                                                                  | <b>Insulator and Fittings</b>                                                                                                                                      |                                |      |          |                         |                          |                  |
|                                                                             | <b>Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn. Arcing ring etc</b> |                                |      |          |                         |                          |                  |
|                                                                             | <b>Overland Portion</b>                                                                                                                                            |                                |      |          |                         |                          |                  |
| 5.2.1                                                                       | 120kN single suspension Insulators set (Heavy Suspension) for "twin ACSR Mallard equivalent ACCC" - Complete Assembly                                              |                                | set  | 5        |                         |                          |                  |
| 5.2.2                                                                       | 120kN jumper suspension set for "Twin ACSR Mallard equivalent ACCC" - Complete Assembly                                                                            |                                | set  | 5        |                         |                          |                  |
| 5.2.3                                                                       | 210kN twin tension set for "Twin ACSR Mallard equivalent ACCC" - Complete Assembly                                                                                 |                                | set  | 6        |                         |                          |                  |
| <b>5.3</b>                                                                  | <b>Phase conductor, earthwire, OPGW &amp; Fittings</b>                                                                                                             |                                |      |          |                         |                          |                  |
| 5.3.1                                                                       | Midspace Joint for "ACSR Mallard equivalent ACCC" conductor                                                                                                        |                                | each | 2        |                         |                          |                  |
| 5.3.2                                                                       | Repair sleeve for "ACSR Mallard equivalent ACCC" conductor                                                                                                         |                                | each | 2        |                         |                          |                  |
| 5.3.3                                                                       | Spacer Damper for Twin Bundle "ACSR Mallard equivalent ACCC"                                                                                                       |                                | each | 5        |                         |                          |                  |
| 5.3.4                                                                       | Jumper Spacer for Twin Bundle "ACSR Mallard equivalent ACCC"                                                                                                       |                                | each | 4        |                         |                          |                  |
| 5.3.5                                                                       | Suspension set for 7x4.00mm Equivalent OPGW                                                                                                                        |                                | each | 3        |                         |                          |                  |
| 5.3.6                                                                       | Tension set for 7x4.00mm Equivalent OPGW                                                                                                                           |                                | each | 3        |                         |                          |                  |
| 5.3.7                                                                       | Vibration damper for 7x4.00mm Equivalent OPGW                                                                                                                      |                                | each | 3        |                         |                          |                  |
| <b>5.4</b>                                                                  | <b>Temporary earthing equipment</b>                                                                                                                                |                                | each | 1        |                         |                          |                  |
| <b>5.5</b>                                                                  | <b>Elcometer</b>                                                                                                                                                   |                                | each | 1        |                         |                          |                  |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                           | Description                                                                                                                      | Country of origin <sup>2</sup> | Unit | Quantity | Unit Price <sup>1</sup> | Total Price <sup>1</sup> | Taxes and Duties |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-------------------------|--------------------------|------------------|
|                                                                                |                                                                                                                                  |                                |      |          | Foreign Currency [XXX]  | Foreign Currency [XXX]   | .                |
| 1                                                                              | 2                                                                                                                                | 3*                             | 4    | 5        | 6                       | 7= 5 x 6                 | 8                |
| <b>Schedule No. 1C Plant and Mandatory Spare Parts Supplied from Abroad</b>    |                                                                                                                                  |                                |      |          |                         |                          |                  |
| 5.6                                                                            | Motorised jointing compressor for conductor complete with dies suitable for conductors & earthwires to be used for this Contract |                                | each | 1        |                         |                          |                  |
| <b>Total Columns 8 to be carried forward to Schedule No. 5 - Grand Summary</b> |                                                                                                                                  |                                |      |          |                         |                          |                  |

- 1 Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.
- 2 Bidders shall enter a code representing the country of origin of all imported plant and equipment.
- 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.

**Country of Origin Declaration Form**

| Item | Description                                        | Code | Country |
|------|----------------------------------------------------|------|---------|
| 1    | Towers                                             |      |         |
| 2    | Conductor & Earthwire                              |      |         |
| 3    | Disc Insulator                                     |      |         |
| 4    | Fittings for ACCC Conductor, Earthwire & Insulator |      |         |
| 5    | OPGW & its Fittings Accessories                    |      |         |
| 6    | Aviation Equipments                                |      |         |
| 7    | Design & Engg + Proto Testing of Towers            |      |         |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| <b>A. LILO of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line at Kaliganj Substation</b>                                                                                                                                                                     |                                                                                                                                    |                                |                       |          |                             |                 |                             |                 |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
| Item                                                                                                                                                                                                                                                                | Description                                                                                                                        | Country of origin <sup>2</sup> | Unit                  | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|                                                                                                                                                                                                                                                                     |                                                                                                                                    |                                |                       |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                                                                                                                                                                                   | 2                                                                                                                                  | 3*                             | 4                     | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b>                                                                                                                                                                  |                                                                                                                                    |                                |                       |          |                             |                 |                             |                 |                      |
| <b>Supply of 400 kV double and 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, earthing, etc.</b> |                                                                                                                                    |                                |                       |          |                             |                 |                             |                 |                      |
| <b>1</b>                                                                                                                                                                                                                                                            | <b>Overland Portion</b>                                                                                                            |                                |                       |          |                             |                 |                             |                 |                      |
| <b>1.1</b>                                                                                                                                                                                                                                                          | <b>Tower type "4DT6"</b>                                                                                                           |                                |                       |          |                             |                 |                             |                 |                      |
| 1.1.1                                                                                                                                                                                                                                                               | Tower type 4DT6+9 m                                                                                                                |                                | each                  | 1        |                             |                 |                             |                 |                      |
| 1.1.2                                                                                                                                                                                                                                                               | Tower type 4DT6+4.5 m                                                                                                              |                                | each                  | 1        |                             |                 |                             |                 |                      |
| <b>1.2</b>                                                                                                                                                                                                                                                          | <b>Tower type "4D25"</b>                                                                                                           |                                |                       |          |                             |                 |                             |                 |                      |
| 1.2.1                                                                                                                                                                                                                                                               | Tower type 4D25 +9 m                                                                                                               |                                | each                  | 1        |                             |                 |                             |                 |                      |
| 1.2.2                                                                                                                                                                                                                                                               | Tower type 4D25 +4.5 m                                                                                                             |                                | each                  | 1        |                             |                 |                             |                 |                      |
| <b>1.3</b>                                                                                                                                                                                                                                                          | Auxiliary crossarm for tower type 4DT6                                                                                             |                                | per set of three      | 1        |                             |                 |                             |                 |                      |
| <b>2</b>                                                                                                                                                                                                                                                            | <b>Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints</b>                                          |                                |                       |          |                             |                 |                             |                 |                      |
| <b>2.1</b>                                                                                                                                                                                                                                                          | <b>Overland Portion</b>                                                                                                            |                                |                       |          |                             |                 |                             |                 |                      |
| 2.1.1                                                                                                                                                                                                                                                               | "ACSR Finch" Phase Conductor (3 Phase, Double Circuit, Quad Bundle per phase on the line)                                          |                                | Route km <sup>3</sup> | 1        |                             |                 |                             |                 |                      |
| 2.1.2                                                                                                                                                                                                                                                               | ACSR Dorking Earthware                                                                                                             |                                | Route km <sup>3</sup> | 1        |                             |                 |                             |                 |                      |
| 2.1.3                                                                                                                                                                                                                                                               | ACSR Dorking Earthware equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. |                                | Route km <sup>3</sup> | 1        |                             |                 |                             |                 |                      |
| <b>3</b>                                                                                                                                                                                                                                                            | <b>Insulator strings, with associated suspension and tension clamps for twin ACSR Mallard Conductor</b>                            |                                |                       |          |                             |                 |                             |                 |                      |
| <b>3.1</b>                                                                                                                                                                                                                                                          | <b>Overland Portion</b>                                                                                                            |                                |                       |          |                             |                 |                             |                 |                      |
| 3.1.1                                                                                                                                                                                                                                                               | a) Single suspension string (Heavy Suspension), 210 kN -disc only                                                                  |                                | Set                   | 6        |                             |                 |                             |                 |                      |
|                                                                                                                                                                                                                                                                     | b) Single suspension string (Heavy Suspension), 210 kN -fittings only                                                              |                                | Set                   | 6        |                             |                 |                             |                 |                      |
| 3.1.2                                                                                                                                                                                                                                                               | a) Double tension string, 2x400kN -disc only                                                                                       |                                | Set                   | 36       |                             |                 |                             |                 |                      |
|                                                                                                                                                                                                                                                                     | b) Double tension string, 2x400kN -fittings only                                                                                   |                                | Set                   | 36       |                             |                 |                             |                 |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                                                                     | Country of origin <sup>2</sup> | Unit      | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
|                                                                                                    |                                                                                                                                                                 |                                |           |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                  | 2                                                                                                                                                               | 3*                             | 4         | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                                                                 |                                |           |          |                             |                 |                             |                 |                      |
| 3.1.3                                                                                              | a) Single jumper suspension I-string, having each string 1x210 kN-disc only                                                                                     |                                | Set       | 6        |                             |                 |                             |                 |                      |
|                                                                                                    | b) Single jumper suspension I-string, having each string 1x210 kN-fittings only                                                                                 |                                | Set       | 6        |                             |                 |                             |                 |                      |
| 3.1.4                                                                                              | a) Single tension string, upright low duty 210kN- disc only                                                                                                     |                                | Set       | 12       |                             |                 |                             |                 |                      |
|                                                                                                    | b) Single tension string, upright low duty 210kN- fittings only                                                                                                 |                                | Set       | 12       |                             |                 |                             |                 |                      |
| 3.1.5                                                                                              | a) Single tension string, inverted low duty 210kN -discs only                                                                                                   |                                | Set       | 12       |                             |                 |                             |                 |                      |
|                                                                                                    | b) Single tension string, inverted low duty 210kN -fittings only                                                                                                |                                | Set       | 12       |                             |                 |                             |                 |                      |
|                                                                                                    | <b>OPGW and Earthware sets, complete with all accessories, incl. armour rods and earth bounds</b>                                                               |                                |           |          |                             |                 |                             |                 |                      |
| 3.1.6                                                                                              | Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                                                      |                                | set       | 2        |                             |                 |                             |                 |                      |
| 3.1.7                                                                                              | Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                                                         |                                | set       | 6        |                             |                 |                             |                 |                      |
|                                                                                                    | <b>Dampers</b>                                                                                                                                                  |                                |           |          |                             |                 |                             |                 |                      |
| 3.1.8                                                                                              | Vibration damper for phase conductor                                                                                                                            |                                | per span  | 4        |                             |                 |                             |                 |                      |
| 3.1.9                                                                                              | Spacer damper for phase conductor                                                                                                                               |                                | per span  | 4        |                             |                 |                             |                 |                      |
| 3.1.10                                                                                             | Vibration damper for OPGW                                                                                                                                       |                                | per span  | 4        |                             |                 |                             |                 |                      |
| 3.1.11                                                                                             | Spacer for jumper                                                                                                                                               |                                | nos.      | 6        |                             |                 |                             |                 |                      |
| <b>4</b>                                                                                           | <b>Aerial Markers</b>                                                                                                                                           |                                |           |          |                             |                 |                             |                 |                      |
| 4.1                                                                                                | Painting of tower having height more than 60 meter in accordance with the requirements of the Technical Specification                                           |                                | per tower | 1        |                             |                 |                             |                 |                      |
| 4.2                                                                                                | Painting of tower (Reflecting Paint) upto 3 meter in submerge area in accordance with the requirements of the Technical Specification                           |                                | per tower | 1        |                             |                 |                             |                 |                      |
| 4.3                                                                                                | Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc. |                                | each      | 3        |                             |                 |                             |                 |                      |
| 4.4                                                                                                | Aircraft warning spheres                                                                                                                                        |                                | each      | 3        |                             |                 |                             |                 |                      |
| 4.5                                                                                                | Bird diverters                                                                                                                                                  |                                | each      | 3        |                             |                 |                             |                 |                      |
| 4.6                                                                                                | Bird guards, one bird guard per each crossarm applied on intermediate towers                                                                                    |                                | each      | 12       |                             |                 |                             |                 |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                                                                 | Country of origin <sup>2</sup> | Unit | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
|                                                                                                    |                                                                                                                                                             |                                |      |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                  | 2                                                                                                                                                           | 3*                             | 4    | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                                                             |                                |      |          |                             |                 |                             |                 |                      |
| <b>5</b>                                                                                           | <b>Mandatory Spare Parts and Tools</b>                                                                                                                      |                                |      |          |                             |                 |                             |                 |                      |
| <b>5.1</b>                                                                                         | <b>Tower</b>                                                                                                                                                |                                |      |          |                             |                 |                             |                 |                      |
| 5.1.1                                                                                              | Galvanized Tower Steel                                                                                                                                      |                                |      |          |                             |                 |                             |                 |                      |
| (a)                                                                                                | Fabricated                                                                                                                                                  |                                | ton  | 1        |                             |                 |                             |                 |                      |
| (b)                                                                                                | Non-fabricated                                                                                                                                              |                                | ton  | 1        |                             |                 |                             |                 |                      |
| <b>5.2</b>                                                                                         | <b>Insulator and Fittings</b>                                                                                                                               |                                |      |          |                             |                 |                             |                 |                      |
|                                                                                                    | Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn. Arcing ring etc |                                |      |          |                             |                 |                             |                 |                      |
|                                                                                                    | <b>Overland Portion</b>                                                                                                                                     |                                |      |          |                             |                 |                             |                 |                      |
| 5.2.1                                                                                              | 210kN single suspension Insulators set (Heavy Suspension) for "Quad ACSR FINCH" - Complete Assembly                                                         |                                | set  | 6        |                             |                 |                             |                 |                      |
| 5.2.2                                                                                              | 210kN jumper suspension set for "Quad ACSR FINCH" - Complete Assembly                                                                                       |                                | set  | 2        |                             |                 |                             |                 |                      |
| 5.2.3                                                                                              | 400kN twin tension set for "Quad ACSR FINCH" - Complete Assembly                                                                                            |                                | set  | 6        |                             |                 |                             |                 |                      |
| <b>5.3</b>                                                                                         | <b>Phase conductor, earthwire, OPGW &amp; Fittings</b>                                                                                                      |                                |      |          |                             |                 |                             |                 |                      |
| 5.3.1                                                                                              | Midspan Joint for "Quad ACSR FINCH" conductor                                                                                                               |                                | each | 2        |                             |                 |                             |                 |                      |
| 5.3.2                                                                                              | Repair sleeve for "Quad ACSR FINCH" conductor                                                                                                               |                                | each | 2        |                             |                 |                             |                 |                      |
| 5.3.3                                                                                              | Spacer Damper for "Quad ACSR FINCH"                                                                                                                         |                                | each | 5        |                             |                 |                             |                 |                      |
| 5.3.4                                                                                              | Jumper Spacer for "Quad ACSR FINCH"                                                                                                                         |                                | each | 4        |                             |                 |                             |                 |                      |
| 5.3.5                                                                                              | Suspension set for ACSR Dorking Equivalent OPGW                                                                                                             |                                | each | 3        |                             |                 |                             |                 |                      |
| 5.3.6                                                                                              | Tension set for ACSR Dorking Equivalent OPGW                                                                                                                |                                | each | 3        |                             |                 |                             |                 |                      |
| 5.3.7                                                                                              | Vibration damper for ACSR Dorking Equivalent OPGW                                                                                                           |                                | each | 3        |                             |                 |                             |                 |                      |
| <b>5.4</b>                                                                                         | <b>Temporary earthing equipment</b>                                                                                                                         |                                | each | 1        |                             |                 |                             |                 |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                                      | Country of origin <sup>2</sup> | Unit | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
|                                                                                                    |                                                                                                                                  |                                |      |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                  | 2                                                                                                                                | 3*                             | 4    | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                                  |                                |      |          |                             |                 |                             |                 |                      |
| 5.5                                                                                                | Elcometer                                                                                                                        |                                | each | 1        |                             |                 |                             |                 |                      |
| 5.6                                                                                                | Motorised jointing compressor for conductor complete with dies suitable for conductors & earthwires to be used for this Contract |                                | each | 1        |                             |                 |                             |                 |                      |
| <b>Total Columns 7&amp;9 to be carried forward to Schedule No. 5 - Grand Summary</b>               |                                                                                                                                  |                                |      |          |                             |                 |                             |                 |                      |

1 Specify currencies in accordance with ITB 19.1 of the BDS.

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

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.

4. Column 6, EXW Price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item or the customs duties and sales and other taxes already paid on previously imported items."

**Country of Origin Declaration Form**

| Item | Description | Code | Country |
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**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| <b>B. Connection of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line and Purbachal-Bashundhara 230kV double circuit Line at Purbachal Substation</b>                                                                                                          |                                                                                                                                    |                                |                  |          |                             |                 |                             |                 |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
| Item                                                                                                                                                                                                                                                                | Description                                                                                                                        | Country of origin <sup>2</sup> | Unit             | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|                                                                                                                                                                                                                                                                     |                                                                                                                                    |                                |                  |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                                                                                                                                                                                   | 2                                                                                                                                  | 3*                             | 4                | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2B Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b>                                                                                                                                                                  |                                                                                                                                    |                                |                  |          |                             |                 |                             |                 |                      |
| <b>Supply of 400 kV double and 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, earthing, etc.</b> |                                                                                                                                    |                                |                  |          |                             |                 |                             |                 |                      |
| <b>1</b>                                                                                                                                                                                                                                                            | <b>Overland Portion</b>                                                                                                            |                                |                  |          |                             |                 |                             |                 |                      |
| <b>1.1</b>                                                                                                                                                                                                                                                          | <b>Tower type "4DT6"</b>                                                                                                           |                                |                  |          |                             |                 |                             |                 |                      |
| 1.1.1                                                                                                                                                                                                                                                               | Tower type 4DT6+9 m                                                                                                                |                                | each             | 1        |                             |                 |                             |                 |                      |
| 1.1.2                                                                                                                                                                                                                                                               | Tower type 4DT6+6 m                                                                                                                |                                | each             | 1        |                             |                 |                             |                 |                      |
| <b>1.2</b>                                                                                                                                                                                                                                                          | <b>Tower type "2DT6"</b>                                                                                                           |                                |                  |          |                             |                 |                             |                 |                      |
| 1.2.1                                                                                                                                                                                                                                                               | Tower type 2DT6 +9 m                                                                                                               |                                | each             | 1        |                             |                 |                             |                 |                      |
| 1.2.2                                                                                                                                                                                                                                                               | Tower type 2DT6 +15 m                                                                                                              |                                | each             | 1        |                             |                 |                             |                 |                      |
| 1.3                                                                                                                                                                                                                                                                 | Auxiliary crossarm for tower type 2DT6                                                                                             |                                | per set of three | 1        |                             |                 |                             |                 |                      |
| <b>1.4</b>                                                                                                                                                                                                                                                          | Auxiliary crossarm for tower type 4DT6                                                                                             |                                | per set of three | 1        |                             |                 |                             |                 |                      |
| <b>2</b>                                                                                                                                                                                                                                                            | <b>Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints</b>                                          |                                |                  |          |                             |                 |                             |                 |                      |
| <b>2.1</b>                                                                                                                                                                                                                                                          | <b>Overland Portion</b>                                                                                                            |                                |                  |          |                             |                 |                             |                 |                      |
| 2.1.1                                                                                                                                                                                                                                                               | "ACSR Finch" Phase Conductor (3 Phase, Double Circuit, Quad Bundle per phase on the line)                                          |                                | Route km3        | 0.5      |                             |                 |                             |                 |                      |
| 2.1.2                                                                                                                                                                                                                                                               | "ACSR Mallard" Phase Conductor (3 Phase, Double Circuit, Twin Bundle per phase on the line)                                        |                                | Route km3        | 0.5      |                             |                 |                             |                 |                      |
| 2.1.3                                                                                                                                                                                                                                                               | ACSR Dorking Earthware                                                                                                             |                                | Route km3        | 0.5      |                             |                 |                             |                 |                      |
| 2.1.4                                                                                                                                                                                                                                                               | ACSR Dorking Earthware equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. |                                | Route km3        | 0.5      |                             |                 |                             |                 |                      |
| 2.1.5                                                                                                                                                                                                                                                               | 7X4.0 GS earthware                                                                                                                 |                                | Route km3        | 0.5      |                             |                 |                             |                 |                      |
| 2.1.6                                                                                                                                                                                                                                                               | 7X4.0 GS earthware equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes.     |                                | Route km3        | 0.5      |                             |                 |                             |                 |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                              | Country of origin <sup>2</sup> | Unit     | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
|                                                                                                    |                                                                                                                          |                                |          |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                  | 2                                                                                                                        | 3*                             | 4        | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2B Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                          |                                |          |          |                             |                 |                             |                 |                      |
| <b>3</b>                                                                                           | <b>Insulator strings, with associated suspension and tension clamps for twin ACSR Mallard and ACSR Mallard Conductor</b> |                                |          |          |                             |                 |                             |                 |                      |
| <b>3.1</b>                                                                                         | <b>Overland Portion</b>                                                                                                  |                                |          |          |                             |                 |                             |                 |                      |
| <b>3.1.1</b>                                                                                       | a) Single suspension string (Heavy Suspension), 120 kN -disc only                                                        |                                | Set      | 1        |                             |                 |                             |                 |                      |
|                                                                                                    | b) Single suspension string (Heavy Suspension), 120 kN -fittings only                                                    |                                | Set      | 1        |                             |                 |                             |                 |                      |
| <b>3.1.2</b>                                                                                       | a) Single suspension string (Heavy Suspension), 210 kN -disc only                                                        |                                | Set      | 1        |                             |                 |                             |                 |                      |
|                                                                                                    | b) Single suspension string (Heavy Suspension), 210 kN -fittings only                                                    |                                | Set      | 1        |                             |                 |                             |                 |                      |
| 3.1.3                                                                                              | a) Double tension string, 2x210kN -disc only                                                                             |                                | Set      | 24       |                             |                 |                             |                 |                      |
|                                                                                                    | b) Double tension string, 2x210kN -fittings only                                                                         |                                | Set      | 24       |                             |                 |                             |                 |                      |
| 3.1.4                                                                                              | a) Double tension string, 2x400kN -disc only                                                                             |                                | Set      | 24       |                             |                 |                             |                 |                      |
|                                                                                                    | b) Double tension string, 2x400kN -fittings only                                                                         |                                | Set      | 24       |                             |                 |                             |                 |                      |
| 3.1.5                                                                                              | a) Single jumper suspension I-string, having each string 1x210 kN-disc only                                              |                                | Set      | 6        |                             |                 |                             |                 |                      |
|                                                                                                    | b) Single jumper suspension I-string, having each string 1x210 kN-fittings only                                          |                                | Set      | 6        |                             |                 |                             |                 |                      |
| 3.1.6                                                                                              | a) Single tension string, upright low duty 210kN- disc only                                                              |                                | Set      | 12       |                             |                 |                             |                 |                      |
|                                                                                                    | b) Single tension string, upright low duty 210kN- fittings only                                                          |                                | Set      | 12       |                             |                 |                             |                 |                      |
| 3.1.7                                                                                              | a) Single tension string, inverted low duty 210kN -discs only                                                            |                                | Set      | 12       |                             |                 |                             |                 |                      |
|                                                                                                    | b) Single tension string, inverted low duty 210kN -fittings only                                                         |                                | Set      | 12       |                             |                 |                             |                 |                      |
|                                                                                                    | <b>OPGW and Earthware sets, complete with all accessories, incl. armour rods and earth bounds</b>                        |                                |          |          |                             |                 |                             |                 |                      |
| 3.1.6                                                                                              | Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)               |                                | set      | 2        |                             |                 |                             |                 |                      |
| 3.1.7                                                                                              | Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                  |                                | set      | 6        |                             |                 |                             |                 |                      |
|                                                                                                    | <b>Dampers</b>                                                                                                           |                                |          |          |                             |                 |                             |                 |                      |
| 3.1.8                                                                                              | Vibration damper for phase conductor                                                                                     |                                | per span | 4        |                             |                 |                             |                 |                      |
| 3.1.9                                                                                              | Spacer damper for phase conductor                                                                                        |                                | per span | 4        |                             |                 |                             |                 |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                                                                     | Country of origin <sup>2</sup> | Unit      | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
|                                                                                                    |                                                                                                                                                                 |                                |           |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                  | 2                                                                                                                                                               | 3*                             | 4         | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2B Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                                                                 |                                |           |          |                             |                 |                             |                 |                      |
| 3.1.10                                                                                             | Vibration damper for OPGW                                                                                                                                       |                                | per span  | 4        |                             |                 |                             |                 |                      |
| 3.1.11                                                                                             | Spacer for jumper                                                                                                                                               |                                | nos.      | 6        |                             |                 |                             |                 |                      |
| <b>4</b>                                                                                           | <b>Aerial Markers</b>                                                                                                                                           |                                |           |          |                             |                 |                             |                 |                      |
| 4.1                                                                                                | Painting of tower having height more than 60 meter in accordance with the requirements of the Technical Specification                                           |                                | per tower | 1        |                             |                 |                             |                 |                      |
| 4.2                                                                                                | Painting of tower (Reflecting Paint) upto 3 meter in submerge area in accordance with the requirements of the Technical Specification                           |                                | per tower | 1        |                             |                 |                             |                 |                      |
| 4.3                                                                                                | Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc. |                                | each      | 3        |                             |                 |                             |                 |                      |
| 4.4                                                                                                | Aircraft warning spheres                                                                                                                                        |                                | each      | 3        |                             |                 |                             |                 |                      |
| 4.5                                                                                                | Bird diverters                                                                                                                                                  |                                | each      | 3        |                             |                 |                             |                 |                      |
| 4.6                                                                                                | Bird guards, one bird guard per each crossarm applied on intermediate towers                                                                                    |                                | each      | 12       |                             |                 |                             |                 |                      |
| <b>5</b>                                                                                           | <b>Mandatory Spare Parts and Tools</b>                                                                                                                          |                                |           |          |                             |                 |                             |                 |                      |
| <b>5.1</b>                                                                                         | <b>Tower</b>                                                                                                                                                    |                                |           |          |                             |                 |                             |                 |                      |
| 5.1.1                                                                                              | Galvanized Tower Steel                                                                                                                                          |                                |           |          |                             |                 |                             |                 |                      |
| (a)                                                                                                | Fabricated                                                                                                                                                      |                                | ton       | 1        |                             |                 |                             |                 |                      |
| (b)                                                                                                | Non-fabricated                                                                                                                                                  |                                | ton       | 1        |                             |                 |                             |                 |                      |
| <b>5.2</b>                                                                                         | <b>Insulator and Fittings</b>                                                                                                                                   |                                |           |          |                             |                 |                             |                 |                      |
|                                                                                                    | Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn. Arcing ring etc     |                                |           |          |                             |                 |                             |                 |                      |
|                                                                                                    | <b>Overland Portion</b>                                                                                                                                         |                                |           |          |                             |                 |                             |                 |                      |
| 5.2.1                                                                                              | 210kN twin tension set for "Twin ACSR Mallard" - Complete Assembly                                                                                              |                                | set       | 6        |                             |                 |                             |                 |                      |
| <b>5.3</b>                                                                                         | <b>Phase conductor, earthwire, OPGW &amp; Fittings</b>                                                                                                          |                                |           |          |                             |                 |                             |                 |                      |
| 5.3.1                                                                                              | Midspan Joint for "Twin ACSR Mallard" conductor                                                                                                                 |                                | each      | 2        |                             |                 |                             |                 |                      |
| 5.3.2                                                                                              | Repair sleeve for "Twin ACSR Mallard" conductor                                                                                                                 |                                | each      | 2        |                             |                 |                             |                 |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                                                 | Country of origin <sup>2</sup> | Unit | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
|                                                                                                    |                                                                                                                                             |                                |      |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                  | 2                                                                                                                                           | 3*                             | 4    | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2B Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                                             |                                |      |          |                             |                 |                             |                 |                      |
| 5.3.3                                                                                              | Spacer Damper for "Twin ACSR Mallard"                                                                                                       |                                | each | 5        |                             |                 |                             |                 |                      |
| 5.3.4                                                                                              | Jumper Spacer for "Twin ACSR Mallard"                                                                                                       |                                | each | 4        |                             |                 |                             |                 |                      |
| 5.3.5                                                                                              | Suspension set for 7X4.0 GS earthware Equivalent OPGW                                                                                       |                                | each | 3        |                             |                 |                             |                 |                      |
| 5.3.6                                                                                              | Tension set for 7X4.0 GS earthware Equivalent OPGW                                                                                          |                                | each | 3        |                             |                 |                             |                 |                      |
| 5.3.7                                                                                              | Vibration damper for 7X4.0 GS earthware Equivalent OPGW                                                                                     |                                | each | 3        |                             |                 |                             |                 |                      |
| <b>5.4</b>                                                                                         | <b>Temporary earthing equipment</b>                                                                                                         |                                | each | 1        |                             |                 |                             |                 |                      |
| <b>5.5</b>                                                                                         | <b>Elcometer</b>                                                                                                                            |                                | each | 1        |                             |                 |                             |                 |                      |
| <b>5.6</b>                                                                                         | <b>Motorised jointing compressor for conductor complete with dies suitable for conductors &amp; earthwires to be used for this Contract</b> |                                | each | 1        |                             |                 |                             |                 |                      |
| <b>Total Columns 7&amp;9 to be carried forward to Schedule No. 5 - Grand Summary</b>               |                                                                                                                                             |                                |      |          |                             |                 |                             |                 |                      |

1 Specify currencies in accordance with ITB 19.1 of the BDS.

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

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.

4. Column 6, EXW Price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item or the customs duties and sales and other taxes already paid on previously imported items."

**Country of Origin Declaration Form**

| Item | Description | Code | Country |
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**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| <b>C. LILO of Tongi-Ghorashal 230kV double circuit Line at Kaliganj Substation</b>                                                                                                                                                                                  |                                                                                                                                                      |                                |                       |          |                             |                 |                             |                 |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
| Item                                                                                                                                                                                                                                                                | Description                                                                                                                                          | Country of origin <sup>2</sup> | Unit                  | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|                                                                                                                                                                                                                                                                     |                                                                                                                                                      |                                |                       |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                                                                                                                                                                                   | 2                                                                                                                                                    | 3*                             | 4                     | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2C Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b>                                                                                                                                                                  |                                                                                                                                                      |                                |                       |          |                             |                 |                             |                 |                      |
| <b>Supply of 230 kV double and 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, earthing, etc.</b> |                                                                                                                                                      |                                |                       |          |                             |                 |                             |                 |                      |
| <b>1</b>                                                                                                                                                                                                                                                            | <b>Overland Portion</b>                                                                                                                              |                                |                       |          |                             |                 |                             |                 |                      |
| <b>1.1</b>                                                                                                                                                                                                                                                          | <b>Tower type "2DT6"</b>                                                                                                                             |                                |                       |          |                             |                 |                             |                 |                      |
| 1.1.1                                                                                                                                                                                                                                                               | Tower type 2DT6+6 m                                                                                                                                  |                                | each                  | 1        |                             |                 |                             |                 |                      |
| 1.1.2                                                                                                                                                                                                                                                               | Tower type 2DT6+15 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| <b>1.2</b>                                                                                                                                                                                                                                                          | <b>Tower type "2QL"</b>                                                                                                                              |                                |                       |          |                             |                 |                             |                 |                      |
| 1.2.1                                                                                                                                                                                                                                                               | Tower type 2Q1 +15 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| 1.2.2                                                                                                                                                                                                                                                               | Tower type 2Q1 +21 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| <b>1.3</b>                                                                                                                                                                                                                                                          | <b>Tower type "2Q1"</b>                                                                                                                              |                                |                       |          |                             |                 |                             |                 |                      |
| 1.3.1                                                                                                                                                                                                                                                               | Tower type 2Q1 +15 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| 1.3.2                                                                                                                                                                                                                                                               | Tower type 2Q1 +21 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| <b>1.4</b>                                                                                                                                                                                                                                                          | <b>Tower type "2Q15"</b>                                                                                                                             |                                |                       |          |                             |                 |                             |                 |                      |
| 1.4.1                                                                                                                                                                                                                                                               | Tower type 2Q15+ 6 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| 1.4.2                                                                                                                                                                                                                                                               | Tower type 2Q15+ 9 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| <b>1.5</b>                                                                                                                                                                                                                                                          | <b>Tower type "2Q30"</b>                                                                                                                             |                                |                       |          |                             |                 |                             |                 |                      |
| 1.5.1                                                                                                                                                                                                                                                               | Tower type 2Q30+ 6 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| 1.5.2                                                                                                                                                                                                                                                               | Tower type 2Q30+ 9 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| <b>1.6</b>                                                                                                                                                                                                                                                          | <b>Tower type "2QT6"</b>                                                                                                                             |                                |                       |          |                             |                 |                             |                 |                      |
| 1.6.1                                                                                                                                                                                                                                                               | Tower type 2QT6+ 6 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| 1.6.2                                                                                                                                                                                                                                                               | Tower type 2QT6+ 9 m                                                                                                                                 |                                | each                  | 1        |                             |                 |                             |                 |                      |
| <b>1.7</b>                                                                                                                                                                                                                                                          | <b>Tower type "2QT6H" with any Extension</b>                                                                                                         |                                | each                  | 2        |                             |                 |                             |                 |                      |
| <b>1.8</b>                                                                                                                                                                                                                                                          | <b>Auxiliary crossarm for tower type 2QT6</b>                                                                                                        |                                | per set of three      | 4        |                             |                 |                             |                 |                      |
| <b>2</b>                                                                                                                                                                                                                                                            | <b>Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints</b>                                                            |                                |                       |          |                             |                 |                             |                 |                      |
| <b>2.1</b>                                                                                                                                                                                                                                                          | <b>Overland Portion</b>                                                                                                                              |                                |                       |          |                             |                 |                             |                 |                      |
| 2.1.1                                                                                                                                                                                                                                                               | "ACSR Mallard equivalent ACCC" Phase Conductor (3 Phase, Four Circuit, Twin Bundle per phase on the line)                                            |                                | Route km <sup>3</sup> | 3.5      |                             |                 |                             |                 |                      |
| 2.1.2                                                                                                                                                                                                                                                               | 7x4.00mm equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. Two OPGW earthwire on the line. |                                | Route km <sup>3</sup> | 3.5      |                             |                 |                             |                 |                      |
| <b>3</b>                                                                                                                                                                                                                                                            | <b>Insulator strings, with associated suspension and tension clamps for twin ACSR Mallard equivalent ACCC Conductor</b>                              |                                |                       |          |                             |                 |                             |                 |                      |
| <b>3.1</b>                                                                                                                                                                                                                                                          | <b>Overland Portion</b>                                                                                                                              |                                |                       |          |                             |                 |                             |                 |                      |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                                                                     | Country of origin <sup>2</sup> | Unit      | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------|----------|-----------------------------|-----------------|-----------------------------|-----------------|------------------|
|                                                                                                    |                                                                                                                                                                 |                                |           |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price |                  |
| 1                                                                                                  | 2                                                                                                                                                               | 3*                             | 4         | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10               |
| <b>Schedule No. 2C Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                                                                 |                                |           |          |                             |                 |                             |                 |                  |
| 3.1.1                                                                                              | a) Single suspension string (Heavy Suspension), 210 kN -disc only                                                                                               |                                | Set       | 6        |                             |                 |                             |                 |                  |
|                                                                                                    | a) Single suspension string (Heavy Suspension), 210 kN -fittings only                                                                                           |                                | Set       | 6        |                             |                 |                             |                 |                  |
| 3.1.2                                                                                              | a) Double tension string, 2 x 210kN -disc only                                                                                                                  |                                | Set       | 240      |                             |                 |                             |                 |                  |
|                                                                                                    | b) Double tension string, 2 x 210kN -fittings only                                                                                                              |                                | Set       | 240      |                             |                 |                             |                 |                  |
| 3.1.3                                                                                              | a) Single jumper suspension I-string, having each string 1x120 kN-disc only                                                                                     |                                | Set       | 6        |                             |                 |                             |                 |                  |
|                                                                                                    | b) Single jumper suspension I-string, having each string 1 x120 kN-fittings only                                                                                |                                | Set       | 6        |                             |                 |                             |                 |                  |
| 3.1.4                                                                                              | a) Single tension string, upright low duty 120kN- disc only                                                                                                     |                                | Set       | 12       |                             |                 |                             |                 |                  |
|                                                                                                    | b) Single tension string, upright low duty 120kN- fittings only                                                                                                 |                                | Set       | 12       |                             |                 |                             |                 |                  |
| 3.1.5                                                                                              | a) Single tension string, inverted low duty 120kN -discs only                                                                                                   |                                | Set       | 12       |                             |                 |                             |                 |                  |
|                                                                                                    | b) Single tension string, inverted low duty 120kN -fittings only                                                                                                |                                | Set       | 12       |                             |                 |                             |                 |                  |
|                                                                                                    | <b>OPGW sets, complete with all accessories, incl. armour rods and earth bounds</b>                                                                             |                                |           |          |                             |                 |                             |                 |                  |
| 3.1.6                                                                                              | Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                                                      |                                | set       | 4        |                             |                 |                             |                 |                  |
| 3.1.7                                                                                              | Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)                                                         |                                | set       | 20       |                             |                 |                             |                 |                  |
|                                                                                                    | <b>Dampers</b>                                                                                                                                                  |                                |           |          |                             |                 |                             |                 |                  |
| 3.1.8                                                                                              | Vibration damper for phase conductor                                                                                                                            |                                | per span  | 14       |                             |                 |                             |                 |                  |
| 3.1.9                                                                                              | Spacer damper for phase conductor                                                                                                                               |                                | per span  | 14       |                             |                 |                             |                 |                  |
| 3.1.10                                                                                             | Vibration damper for OPGW                                                                                                                                       |                                | per span  | 14       |                             |                 |                             |                 |                  |
| 3.1.11                                                                                             | Spacer for jumper                                                                                                                                               |                                | nos.      | 36       |                             |                 |                             |                 |                  |
| <b>4</b>                                                                                           | <b>Aerial Markers</b>                                                                                                                                           |                                |           |          |                             |                 |                             |                 |                  |
| 4.1                                                                                                | Painting of tower having height more than 60 meter in accordance with the requirements of the Technical Specification                                           |                                | per tower | 1        |                             |                 |                             |                 |                  |
| 4.2                                                                                                | Painting of tower (Reflecting Paint) upto 3 meter in submerge area in accordance with the requirements of the Technical Specification                           |                                | per tower | 1        |                             |                 |                             |                 |                  |
| 4.3                                                                                                | Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc. |                                | each      | 3        |                             |                 |                             |                 |                  |
| 4.4                                                                                                | Aircraft warning spheres                                                                                                                                        |                                | each      | 3        |                             |                 |                             |                 |                  |
| 4.5                                                                                                | Bird diverters                                                                                                                                                  |                                | each      | 3        |                             |                 |                             |                 |                  |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                                                                 | Country of origin <sup>2</sup> | Unit | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-----------------------------|-----------------|-----------------------------|-----------------|------------------|
|                                                                                                    |                                                                                                                                                             |                                |      |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price |                  |
| 1                                                                                                  | 2                                                                                                                                                           | 3*                             | 4    | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10               |
| <b>Schedule No. 2C Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                                                             |                                |      |          |                             |                 |                             |                 |                  |
| 4.6                                                                                                | Bird guards, one bird guard per each crossarm applied on intermediate towers                                                                                |                                | each | 12       |                             |                 |                             |                 |                  |
| <b>5</b>                                                                                           | <b>Mandatory Spare Parts and Tools</b>                                                                                                                      |                                |      |          |                             |                 |                             |                 |                  |
| <b>5.1</b>                                                                                         | <b>Tower</b>                                                                                                                                                |                                |      |          |                             |                 |                             |                 |                  |
| 5.1.1                                                                                              | Galvanized Tower Steel                                                                                                                                      |                                |      |          |                             |                 |                             |                 |                  |
| (a)                                                                                                | Fabricated                                                                                                                                                  |                                | ton  | 5        |                             |                 |                             |                 |                  |
| (b)                                                                                                | Non-fabricated                                                                                                                                              |                                | ton  | 5        |                             |                 |                             |                 |                  |
| <b>5.2</b>                                                                                         | <b>Insulator and Fittings</b>                                                                                                                               |                                |      |          |                             |                 |                             |                 |                  |
|                                                                                                    | Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn. Arcing ring etc |                                |      |          |                             |                 |                             |                 |                  |
|                                                                                                    | <b>Overland Portion</b>                                                                                                                                     |                                |      |          |                             |                 |                             |                 |                  |
| 5.2.1                                                                                              | 120kN single suspension Insulators set (Heavy Suspension) for "twin ACSR Mallard equivalent ACCC" - Complete Assembly                                       |                                | set  | 5        |                             |                 |                             |                 |                  |
| 5.2.2                                                                                              | 120kN jumper suspension set for "Twin ACSR Mallard equivalent ACCC" - Complete Assembly                                                                     |                                | set  | 5        |                             |                 |                             |                 |                  |
| 5.2.3                                                                                              | 210kN twin tension set for "Twin ACSR Mallard equivalent ACCC" - Complete Assembly                                                                          |                                | set  | 6        |                             |                 |                             |                 |                  |
| <b>5.3</b>                                                                                         | <b>Phase conductor, earthwire, OPGW &amp; Fittings</b>                                                                                                      |                                |      |          |                             |                 |                             |                 |                  |
| 5.3.1                                                                                              | Midspan Joint for "ACSR Mallard equivalent ACCC" conductor                                                                                                  |                                | each | 2        |                             |                 |                             |                 |                  |
| 5.3.2                                                                                              | Repair sleeve for "ACSR Mallard equivalent ACCC" conductor                                                                                                  |                                | each | 2        |                             |                 |                             |                 |                  |
| 5.3.3                                                                                              | Spacer Damper for Twin Bundle "ACSR Mallard equivalent ACCC"                                                                                                |                                | each | 5        |                             |                 |                             |                 |                  |
| 5.3.4                                                                                              | Jumper Spacer for Twin Bundle "ACSR Mallard equivalent ACCC"                                                                                                |                                | each | 4        |                             |                 |                             |                 |                  |
| 5.3.5                                                                                              | Suspension set for 7x4.00mm Equivalent OPGW                                                                                                                 |                                | each | 3        |                             |                 |                             |                 |                  |
| 5.3.6                                                                                              | Tension set for 7x4.00mm Equivalent OPGW                                                                                                                    |                                | each | 3        |                             |                 |                             |                 |                  |
| 5.3.7                                                                                              | Vibration damper for 7x4.00mm Equivalent OPGW                                                                                                               |                                | each | 3        |                             |                 |                             |                 |                  |
| <b>5.4</b>                                                                                         | <b>Temporary earthing equipment</b>                                                                                                                         |                                | each | 1        |                             |                 |                             |                 |                  |
| <b>5.5</b>                                                                                         | <b>Elcometer</b>                                                                                                                                            |                                | each | 1        |                             |                 |                             |                 |                  |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                               | Description                                                                                                                      | Country of origin <sup>2</sup> | Unit | Quantity | Local Currency in BDT       |                 | Foreign Currency in (xxx)   |                 | Taxes and Duties     |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------|----------|-----------------------------|-----------------|-----------------------------|-----------------|----------------------|
|                                                                                                    |                                                                                                                                  |                                |      |          | Unit EXW Price <sup>1</sup> | EXW Total Price | Unit EXW Price <sup>1</sup> | EXW Total Price | Local Currency [BDT] |
| 1                                                                                                  | 2                                                                                                                                | 3*                             | 4    | 5        | 6                           | 7=5*6           | 8                           | 9= 5 x 8        | 10                   |
| <b>Schedule No. 2C Plant and Mandatory Spare Parts Supplied from Within the Employer's Country</b> |                                                                                                                                  |                                |      |          |                             |                 |                             |                 |                      |
| 5.6                                                                                                | Motorised jointing compressor for conductor complete with dies suitable for conductors & earthwires to be used for this Contract |                                | each | 1        |                             |                 |                             |                 |                      |
| <b>Total Columns 7&amp;9 to be carried forward to Schedule No. 5 - Grand Summary</b>               |                                                                                                                                  |                                |      |          |                             |                 |                             |                 |                      |

1 Specify currencies in accordance with ITB 19.1 of the BDS.

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

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.

4. Column 6, EXW Price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item or the customs duties and sales and other taxes already paid on previously imported items."

**Country of Origin Declaration Form**

| Item | Description | Code | Country |
|------|-------------|------|---------|
|      |             |      |         |
|      |             |      |         |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**A. LILO of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line at Kaliganj Substation**

| Item                                                                                   | Description                                                                                                                                                                                                           | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                                                        |                                                                                                                                                                                                                       |          |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                                                      | 2                                                                                                                                                                                                                     | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 3A Design Services</b>                                                 |                                                                                                                                                                                                                       |          |          |                         |                        |                          |                        |
| <b>1</b>                                                                               | <b>Line Design</b>                                                                                                                                                                                                    |          |          |                         |                        |                          |                        |
| 1.1                                                                                    | 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        |                         |                        |                          |                        |
| <b>2</b>                                                                               | <b>Tower Test</b>                                                                                                                                                                                                     |          |          |                         |                        |                          |                        |
| 2.1                                                                                    | <b>Proto assembly of all type towers with all extensions to prove compliance with specification. Payment for successful test only.</b>                                                                                |          |          |                         |                        |                          |                        |
| 2.1.1                                                                                  | 4DT6                                                                                                                                                                                                                  | Lot      | NA       |                         |                        |                          |                        |
| 2.1.2                                                                                  | 4D25                                                                                                                                                                                                                  | Lot      | NA       |                         |                        |                          |                        |
| <b>3</b>                                                                               | <b>Foundation Design</b>                                                                                                                                                                                              |          |          |                         |                        |                          |                        |
| 3.1                                                                                    | Foundation design for all soil types including additional soil investigation and additional soil resistivity measurement                                                                                              | Lump sum | 1        |                         |                        |                          |                        |
| <b>Total Columns 7 &amp; 8 to be carried forward to Schedule No. 5 - Grand Summary</b> |                                                                                                                                                                                                                       |          |          |                         |                        |                          |                        |
| 4                                                                                      | Total Tax and VAT deductible at source(TDS & VDS) under the schedule 3C(to be quoted in the currency similar as above) <sup>2</sup>                                                                                   |          |          |                         |                        |                          |                        |

**1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.**

**2. Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmetic correction by Employer as required.**

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**B. Connection of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line and Purbachal-Bashundhara 230kV double circuit Line at Purbachal Substation**

| Item                                                                                   | Description                                                                                                                                                                                                           | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                                                        |                                                                                                                                                                                                                       |          |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                                                      | 2                                                                                                                                                                                                                     | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 3B Design Services</b>                                                 |                                                                                                                                                                                                                       |          |          |                         |                        |                          |                        |
| <b>1</b>                                                                               | <b>Line Design</b>                                                                                                                                                                                                    |          |          |                         |                        |                          |                        |
| 1.1                                                                                    | 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        |                         |                        |                          |                        |
| <b>2</b>                                                                               | <b>Tower Test</b>                                                                                                                                                                                                     |          |          |                         |                        |                          |                        |
| 2.1                                                                                    | <b>Proto assembly of all type towers with all extensions to prove compliance with specification. Payment for successful test only.</b>                                                                                |          |          |                         |                        |                          |                        |
| 2.1.1                                                                                  | 4DT6                                                                                                                                                                                                                  | Lot      | NA       |                         |                        |                          |                        |
| 2.1.2                                                                                  | 2DT6                                                                                                                                                                                                                  | Lot      | NA       |                         |                        |                          |                        |
| <b>3</b>                                                                               | <b>Foundation Design</b>                                                                                                                                                                                              |          |          |                         |                        |                          |                        |
| 3.1                                                                                    | Foundation design for all soil types including additional soil investigation and additional soil resistivity measurement                                                                                              | Lump sum | 1        |                         |                        |                          |                        |
| <b>Total Columns 7 &amp; 8 to be carried forward to Schedule No. 5 - Grand Summary</b> |                                                                                                                                                                                                                       |          |          |                         |                        |                          |                        |
| 4                                                                                      | Total Tax and VAT deductible at source(TDS & VDS) under the schedule 3C(to be quoted in the currency similar as above) <sup>2</sup>                                                                                   |          |          |                         |                        |                          |                        |

**1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.**

**2. Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmetic correction by Employer as required.**

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**C. LILO of Tongi-Ghorashal 230kV double circuit Line at Kaliganj Substation**

| Item                                                                                   | Description                                                                                                                                                                                                           | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                                                        |                                                                                                                                                                                                                       |          |          | Local Currency [BDT]    | Foreign Currency [XXX] | Local Currency [BDT]     | Foreign Currency [XXX] |
| 1                                                                                      | 2                                                                                                                                                                                                                     | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 3C Design Services</b>                                                 |                                                                                                                                                                                                                       |          |          |                         |                        |                          |                        |
| <b>1</b>                                                                               | <b>Line Design and Tower Design</b>                                                                                                                                                                                   |          |          |                         |                        |                          |                        |
| 1.1                                                                                    | 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        |                         |                        |                          |                        |
| 1.2                                                                                    | Design of Tower type "2QT6H with all extension"                                                                                                                                                                       | each     | 1        |                         |                        |                          |                        |
| <b>2</b>                                                                               | <b>Tower Test</b>                                                                                                                                                                                                     |          |          |                         |                        |                          |                        |
| <b>2.1</b>                                                                             | <b>Proto assembly of all type towers with all extensions to prove compliance with specification. Payment for successful test only.</b>                                                                                |          |          |                         |                        |                          |                        |
| 2.1.1                                                                                  | 2DT6                                                                                                                                                                                                                  | each     | 1        |                         |                        |                          |                        |
| 2.1.2                                                                                  | 2QL                                                                                                                                                                                                                   | each     | 1        |                         |                        |                          |                        |
| 2.1.3                                                                                  | 2Q1                                                                                                                                                                                                                   | each     | 1        |                         |                        |                          |                        |
| 2.1.4                                                                                  | 2Q15                                                                                                                                                                                                                  | each     | 1        |                         |                        |                          |                        |
| 2.1.5                                                                                  | 2Q30                                                                                                                                                                                                                  | each     | 1        |                         |                        |                          |                        |
| 2.1.6                                                                                  | 2QT6                                                                                                                                                                                                                  | each     | 1        |                         |                        |                          |                        |
| 2.1.7                                                                                  | 2QT6H                                                                                                                                                                                                                 | each     | 1        |                         |                        |                          |                        |
| <b>2.2</b>                                                                             | <b>Load Test of towers with all extensions to prove compliance with specification. Payment for successful test only.</b>                                                                                              |          |          |                         |                        |                          |                        |
| 2.2.1                                                                                  | Tower type "2QT6H +21m"                                                                                                                                                                                               |          |          |                         |                        |                          |                        |
| <b>3</b>                                                                               | <b>Foundation Design</b>                                                                                                                                                                                              |          |          |                         |                        |                          |                        |
| 3.1                                                                                    | Foundation design for all soil types including additional soil investigation and additional soil resistivity measurement                                                                                              | Lump sum | 1        |                         |                        |                          |                        |
| <b>Total Columns 7 &amp; 8 to be carried forward to Schedule No. 5 - Grand Summary</b> |                                                                                                                                                                                                                       |          |          |                         |                        |                          |                        |
| 4                                                                                      | Total Tax and VAT deductible at source(TDS & VDS) under the schedule 3C(to be quoted in the currency similar as above) <sup>2</sup>                                                                                   |          |          |                         |                        |                          |                        |

1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

2. Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmetic correction by Employer as required.

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**A. LILO of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line at Kaliganj Substation**

| Item                                                   | Description                                                                                                                                                                                                                                                                                                                          | Unit      | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                                                                                                                                                                                                                                                      |           |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                                                                                                                                                                                                                                                                    | 3         | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4A Installation and Other Services</b> |                                                                                                                                                                                                                                                                                                                                      |           |          |                         |                        |                          |                        |
| <b>1</b>                                               | <b>Survey and soil investigation works</b>                                                                                                                                                                                                                                                                                           |           |          |                         |                        |                          |                        |
| <b>1.1</b>                                             | <b>Survey Work and Compensation</b>                                                                                                                                                                                                                                                                                                  |           |          |                         |                        |                          |                        |
| 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        | 1        |                         |                        |                          |                        |
| 1.1.2                                                  | Payment for Compensation (For resettlement of affected people, dwelling/commercial structures, trees, crops etc. on the Right of Way)                                                                                                                                                                                                | Lumpsum   | 1        |                         |                        |                          |                        |
| <b>1.2</b>                                             | <b>Geotechnical Investigations incl. taking samples, logging and lab testing</b>                                                                                                                                                                                                                                                     |           |          |                         |                        |                          |                        |
| 1.2.1                                                  | Boreholes for geotechnical investigation, incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification                                                                                                                                                                                   |           |          |                         |                        |                          |                        |
| (a)                                                    | Level 2                                                                                                                                                                                                                                                                                                                              | borehole  | 1        |                         |                        |                          |                        |
| (b)                                                    | Level 4                                                                                                                                                                                                                                                                                                                              | borehole  | 1        |                         |                        |                          |                        |
| 1.2.2                                                  | Soil resistivity tests (one per tower)                                                                                                                                                                                                                                                                                               | unit      | 6        |                         |                        |                          |                        |
| <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 "4DT6"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 2.1.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |
| 2.1.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                                                                                 | per tower | 1        |                         |                        |                          |                        |
| <b>2.2</b>                                             | <b>Tower type "4D25"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 2.2.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |
| 2.2.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                                                                                 | per tower | 1        |                         |                        |                          |                        |
| <b>3</b>                                               | <b>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.</b>                                                                              |           |          |                         |                        |                          |                        |
| <b>3.1</b>                                             | <b>Tower type "4DT6"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 3.1.1                                                  | Tower type 4DT6+9 m                                                                                                                                                                                                                                                                                                                  | each      | 1        |                         |                        |                          |                        |
| 3.1.2                                                  | Tower type 4DT6+4.5 m                                                                                                                                                                                                                                                                                                                | each      | 1        |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                   | Description                                                                                                                                                                                                                                                                                                                                                 | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                                                                                                                                                                                                                                                                             |          |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                                                                                                                                                                                                                                                                                           | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4A Installation and Other Services</b> |                                                                                                                                                                                                                                                                                                                                                             |          |          |                         |                        |                          |                        |
| <b>3.2</b>                                             | <b>Tower type "4D25"</b>                                                                                                                                                                                                                                                                                                                                    |          |          |                         |                        |                          |                        |
| 3.2.1                                                  | Tower type 4D25 +9 m                                                                                                                                                                                                                                                                                                                                        | each     | 1        |                         |                        |                          |                        |
| 3.2.2                                                  | Tower type 4D25 +4.5 m                                                                                                                                                                                                                                                                                                                                      | each     | 1        |                         |                        |                          |                        |
| 3.3                                                    | <b>Crossarm Erection</b>                                                                                                                                                                                                                                                                                                                                    | each     | 1        |                         |                        |                          |                        |
| <b>4</b>                                               | <b>Testing of Foundations</b>                                                                                                                                                                                                                                                                                                                               |          |          |                         |                        |                          |                        |
| <b>4.1</b>                                             | <b>Individual Pile test including supply,install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):</b>                                                                                                                                      |          |          |                         |                        |                          |                        |
| (a)                                                    | Compression test                                                                                                                                                                                                                                                                                                                                            | per test | 1        |                         |                        |                          |                        |
| (b)                                                    | Uplift test                                                                                                                                                                                                                                                                                                                                                 | per test | 1        |                         |                        |                          |                        |
| (c)                                                    | Pile Integrity test                                                                                                                                                                                                                                                                                                                                         | per test | 16       |                         |                        |                          |                        |
| <b>5</b>                                               | <b>Stringing of double circuit line, four conductors per phase and one earthware and one OPGW (length approx. Route km)</b>                                                                                                                                                                                                                                 |          |          |                         |                        |                          |                        |
| 5.1.1                                                  | Conductor "ACSR Finch" Phase Conductor (3 Phase, Double Circuit, Quad Bundle per phase on the line)" Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps, Sagging and clipping, Installation of armour rods and Dampers, Pilot strings and jumpers and any other works required as per specification. | route km | 1        |                         |                        |                          |                        |
| 5.1.2                                                  | ACSR Dorking equivalent , 48 fibres OPGW, including joint box, Tension and semi-tension joints, suspension clamps, armour rods and dampers,Sagging and clipping, Installation of intermediate junction boxes and terminal junction boxes at substation gantries ,Earthing jumpers.                                                                          | route km | 1        |                         |                        |                          |                        |
| 5.1.3                                                  | ACSR Dorking earthware,including Compressed dead-ends, compression junction sleeves suspension clamps, armour rods and dampers,Sagging and clipping, Earthing jumpers, warning sphere(if required).                                                                                                                                                         | route km | 1        |                         |                        |                          |                        |
| <b>6</b>                                               | <b>Documentation</b>                                                                                                                                                                                                                                                                                                                                        |          |          |                         |                        |                          |                        |
| 6.1                                                    | Establishment of as-built drawings, manuals and all requested documents as per specifications                                                                                                                                                                                                                                                               | lump sum | 1        |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                   | Description                                                                                    | Unit      | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                |           |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                              | 3         | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4A Installation and Other Services</b> |                                                                                                |           |          |                         |                        |                          |                        |
| <b>7</b>                                               | <b>Miscellaneous</b>                                                                           |           |          |                         |                        |                          |                        |
| 7.1                                                    | General and other works and services, not mentioned before                                     | lump sum  | 1        |                         |                        |                          |                        |
| 7.2                                                    | Transport of the material and equipment supplied from Employer's Country                       | lump sum  | 1        |                         |                        |                          |                        |
| 7.3                                                    | Insurance of material and equipment supplied from Employer's Country during transport          | lump sum  | 1        |                         |                        |                          |                        |
| 7.4                                                    | Painting of towers including bottom part of tower in accordance with Section 21                | lump sum  | 1        |                         |                        |                          |                        |
| 7.6                                                    | Erection of OPGW and earthware connection from terminal tower to substation Gantry/Mast        | per wire  | 4        |                         |                        |                          |                        |
| 7.7                                                    | Additional counterpoise earthing in accordance with requirement of the Technical specification | per meter | 5        |                         |                        |                          |                        |
| 7.8                                                    | Miscellaneous Rates for works certified by the Engineer in accordance with method of Payment   |           |          |                         |                        |                          |                        |
| (a)                                                    | Additional Excavation                                                                          | cu.m      | 100      |                         |                        |                          |                        |
| (b)                                                    | Additional Concrete                                                                            | cu.m      | 50       |                         |                        |                          |                        |
| (c)                                                    | Additional Reinforcement                                                                       | kg        | 500      |                         |                        |                          |                        |
| (d)                                                    | Extra for surface resisting cement per cu.m of concrete                                        | cu.m      | 50       |                         |                        |                          |                        |
| (e)                                                    | Additional Boring (500mm diameter)                                                             | rm        | 50       |                         |                        |                          |                        |
| (f)                                                    | Additional Boring (600mm diameter)                                                             | rm        | 50       |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                   | Description                                                                                                                         | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                                                        |                                                                                                                                     |          |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                                                      | 2                                                                                                                                   | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4A Installation and Other Services</b>                                 |                                                                                                                                     |          |          |                         |                        |                          |                        |
| (g)                                                                                    | Additional Boring (750mm diameter)                                                                                                  | rm       | 50       |                         |                        |                          |                        |
| (h)                                                                                    | Sand Filling                                                                                                                        | cu.m     | 100      |                         |                        |                          |                        |
| 7.9                                                                                    | Environmental and Social Services                                                                                                   | lump sum | 1        |                         |                        |                          |                        |
| 7.10                                                                                   | STI, STD and HIV/AIDS alleviation program <sup>2</sup>                                                                              | lump sum | 1        |                         |                        |                          |                        |
| 7.11                                                                                   | Costs and Expenses related to test witness <sup>3</sup> (Provisional Sum)                                                           | lump sum | 1        |                         |                        |                          |                        |
| 7.12                                                                                   | Dismantling and by-passing of Ghorashal-Kaliganj-Purbachal-Bashundhara 400kV double circuit Line near Kaliganj Substation area.     | lump sum | 1        |                         |                        |                          |                        |
| <b>Total Columns 7 &amp; 8 to be carried forward to Schedule No. 5 - Grand Summary</b> |                                                                                                                                     |          |          |                         |                        |                          |                        |
| 8                                                                                      | Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4A(to be quoted in the currency similar as above) <sup>4</sup> |          |          |                         |                        |                          |                        |

**1 Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.**

**2 As described in SCC 22.2.7**

**3 These costs are fixed ceiling and will be included in total price. But the payment shall be at actual upon submission of relevant documents.**

**4. Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmetic correction by Employer as required.**

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**B. Connection of Ghorashal-Kaliganj-Purbachal 400kV double circuit Line and Purbachal-Bashundhara 230kV double circuit Line at Purbachal Substation**

| Item                                                   | Description                                                                                                                                                                                                                                                                                                                          | Unit      | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                                                                                                                                                                                                                                                      |           |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                                                                                                                                                                                                                                                                    | 3         | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4B Installation and Other Services</b> |                                                                                                                                                                                                                                                                                                                                      |           |          |                         |                        |                          |                        |
| <b>1</b>                                               | <b>Survey and soil investigation works</b>                                                                                                                                                                                                                                                                                           |           |          |                         |                        |                          |                        |
| <b>1.1</b>                                             | <b>Survey Work and Compensation</b>                                                                                                                                                                                                                                                                                                  |           |          |                         |                        |                          |                        |
| 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        | 1        |                         |                        |                          |                        |
| 1.1.2                                                  | Payment for Compensation (For resettlement of affected people, dwelling/commercial structures, trees, crops etc. on the Right of Way)                                                                                                                                                                                                | Lumpsum   | 1        |                         |                        |                          |                        |
| <b>1.2</b>                                             | <b>Geotechnical Investigations incl. taking samples, logging and lab testing</b>                                                                                                                                                                                                                                                     |           |          |                         |                        |                          |                        |
| 1.2.1                                                  | Boreholes for geotechnical investigation, incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification                                                                                                                                                                                   |           |          |                         |                        |                          |                        |
| (a)                                                    | Level 2                                                                                                                                                                                                                                                                                                                              | borehole  | 1        |                         |                        |                          |                        |
| (b)                                                    | Level 4                                                                                                                                                                                                                                                                                                                              | borehole  | 1        |                         |                        |                          |                        |
| 1.2.2                                                  | Soil resistivity tests (one per tower)                                                                                                                                                                                                                                                                                               | unit      | 6        |                         |                        |                          |                        |
| <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 "4DT6"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 2.1.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |
| 2.1.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                                                                                 | per tower | 1        |                         |                        |                          |                        |
| <b>2.2</b>                                             | <b>Tower type "2DT6"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 2.2.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |
| 2.2.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                                                                                 | per tower | 1        |                         |                        |                          |                        |
| <b>3</b>                                               | <b>Erection of 400kV and 230kV 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.</b>                                                                    |           |          |                         |                        |                          |                        |
| <b>3.1</b>                                             | <b>Tower type "4DT6"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 3.1.1                                                  | Tower type 4DT6+9 m                                                                                                                                                                                                                                                                                                                  | each      | 1        |                         |                        |                          |                        |
| 3.1.2                                                  | Tower type 4DT6+6 m                                                                                                                                                                                                                                                                                                                  | each      | 1        |                         |                        |                          |                        |
| <b>3.2</b>                                             | <b>Tower type "2DT6"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 3.2.1                                                  | Tower type 2DT6 +9 m                                                                                                                                                                                                                                                                                                                 | each      | 1        |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                   | Description                                                                                                                                                                                                                                                                                                                                                      | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                                                                                                                                                                                                                                                                                  |          |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                                                                                                                                                                                                                                                                                                | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4B Installation and Other Services</b> |                                                                                                                                                                                                                                                                                                                                                                  |          |          |                         |                        |                          |                        |
| 3.2.2                                                  | Tower type 2DT6 +15 m                                                                                                                                                                                                                                                                                                                                            | each     | 1        |                         |                        |                          |                        |
| 3.3                                                    | <b>Crossarm Erection</b>                                                                                                                                                                                                                                                                                                                                         | each     | 1        |                         |                        |                          |                        |
| 4                                                      | <b>Testing of Foundations</b>                                                                                                                                                                                                                                                                                                                                    |          |          |                         |                        |                          |                        |
| 4.1                                                    | <b>Individual Pile test including supply,install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):</b>                                                                                                                                           |          |          |                         |                        |                          |                        |
| (a)                                                    | Compression test                                                                                                                                                                                                                                                                                                                                                 | per test | 1        |                         |                        |                          |                        |
| (b)                                                    | Uplift test                                                                                                                                                                                                                                                                                                                                                      | per test | 1        |                         |                        |                          |                        |
| (c)                                                    | Pile Integrity test                                                                                                                                                                                                                                                                                                                                              | per test | 16       |                         |                        |                          |                        |
| 5                                                      | <b>Stringing of double circuit line, four/two conductors per phase and one earthware and one OPGW (length approx. Route km)</b>                                                                                                                                                                                                                                  |          |          |                         |                        |                          |                        |
| 5.1.1                                                  | Conductor "ACSR Finch" Phase Conductor (3 Phase, Double Circuit, Quad Bundle per phase on the line)"<br>Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps, Sagging and clipping, Installation of armour rods and Dampers, Pilot strings and jumpers and any other works required as per specification.   | route km | 0.5      |                         |                        |                          |                        |
| 5.1.2                                                  | ACSR Dorking equivalent , 48 fibres OPGW, including joint box, Tension and semi-tension joints, suspension clamps, armour rods and dampers,Sagging and clipping, Installation of intermediate junction boxes and terminal junction boxes at substation gantries ,Earthing jumpers.                                                                               | route km | 0.5      |                         |                        |                          |                        |
| 5.1.3                                                  | ACSR Dorking earthware,including Compressed dead-ends, compression junction sleeves suspension clamps, armour rods and dampers,Sagging and clipping, Earthing jumpers, warning sphere(if required).                                                                                                                                                              | route km | 0.5      |                         |                        |                          |                        |
| 5.1.4                                                  | Conductor "ACSR Mallard" Phase Conductor (3 Phase, Double Circuit, Twin Bundle per phase on the line)"<br>Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps, Sagging and clipping, Installation of armour rods and Dampers, Pilot strings and jumpers and any other works required as per specification. | route km | 0.5      |                         |                        |                          |                        |
| 5.1.5                                                  | 7X4.0 GS equivalent , 48 fibres OPGW, including joint box, Tension and semi-tension joints, suspension clamps, armour rods and dampers,Sagging and clipping, Installation of intermediate junction boxes and terminal junction boxes at substation gantries ,Earthing jumpers.                                                                                   | route km | 0.5      |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                   | Description                                                                                                                    | Unit      | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                                                |           |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                                                              | 3         | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4B Installation and Other Services</b> |                                                                                                                                |           |          |                         |                        |                          |                        |
| 5.1.6                                                  | 7X4.0 GS earthware equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. | route km  | 0.5      |                         |                        |                          |                        |
| <b>6</b>                                               | <b>Documentation</b>                                                                                                           |           |          |                         |                        |                          |                        |
| 6.1                                                    | Establishment of as-built drawings, manuals and all requested documents as per specifications                                  | lump sum  | 1        |                         |                        |                          |                        |
| <b>7</b>                                               | <b>Miscellaneous</b>                                                                                                           |           |          |                         |                        |                          |                        |
| 7.1                                                    | General and other works and services, not mentioned before                                                                     | lump sum  | 1        |                         |                        |                          |                        |
| 7.2                                                    | Transport of the material and equipment supplied from Employer's Country                                                       | lump sum  | 1        |                         |                        |                          |                        |
| 7.3                                                    | Insurance of material and equipment supplied from Employer's Country during transport                                          | lump sum  | 1        |                         |                        |                          |                        |
| 7.4                                                    | Painting of towers including bottom part of tower in accordance with Section 21                                                | lump sum  | 1        |                         |                        |                          |                        |
| 7.6                                                    | Erection of OPGW and earthware connection from terminal tower to substation Gantry/Mast                                        | per wire  | 4        |                         |                        |                          |                        |
| 7.7                                                    | Additional counterpoise earthing in accordance with requirement of the Technical specification                                 | per meter | 5        |                         |                        |                          |                        |
| 7.8                                                    | Miscellaneous Rates for works certified by the Engineer in accordance with method of Payment                                   |           |          |                         |                        |                          |                        |
| (a)                                                    | Additional Excavation                                                                                                          | cu.m      | 100      |                         |                        |                          |                        |
| (b)                                                    | Additional Concrete                                                                                                            | cu.m      | 50       |                         |                        |                          |                        |
| (c)                                                    | Additional Reinforcement                                                                                                       | kg        | 500      |                         |                        |                          |                        |
| (d)                                                    | Extra for surface resisting cement per cu.m of concrete                                                                        | cu.m      | 50       |                         |                        |                          |                        |
| (e)                                                    | Additional Boring (500mm diameter)                                                                                             | rm        | 50       |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                   | Description                                                                                                                                                                                                    | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                                                        |                                                                                                                                                                                                                |          |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                                                      | 2                                                                                                                                                                                                              | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4B Installation and Other Services</b>                                 |                                                                                                                                                                                                                |          |          |                         |                        |                          |                        |
| (f)                                                                                    | Additional Boring (600mm diameter)                                                                                                                                                                             | rm       | 50       |                         |                        |                          |                        |
| (g)                                                                                    | Additional Boring (750mm diameter)                                                                                                                                                                             | rm       | 50       |                         |                        |                          |                        |
| (h)                                                                                    | Sand Filling                                                                                                                                                                                                   | cu.m     | 100      |                         |                        |                          |                        |
| 7.9                                                                                    | Environmental and Social Services                                                                                                                                                                              | lump sum | 1        |                         |                        |                          |                        |
| 7.10                                                                                   | STI, STD and HIV/AIDS alleviation program <sup>2</sup>                                                                                                                                                         | lump sum | 1        |                         |                        |                          |                        |
| 7.11                                                                                   | Costs and Expenses related to test witness <sup>3</sup> (Provisional Sum)                                                                                                                                      | lump sum | 1        |                         |                        |                          |                        |
| 7.12                                                                                   | Dismantling and by-pass of the 400kV part of the connection between Ghorashal-Kaliganj-Purbachal 400kV Transmission Line and Purbachal-Bashundhara 230kV Transmission Line near the Purbachal substation area. |          |          |                         |                        |                          |                        |
| 7.13                                                                                   | Dismantling and by-pass of the 230kV part of the connection between Ghorashal-Kaliganj-Purbachal 400kV Transmission Line and Purbachal-Bashundhara 230kV Transmission Line near the Purbachal substation area. |          |          |                         |                        |                          |                        |
| <b>Total Columns 7 &amp; 8 to be carried forward to Schedule No. 5 - Grand Summary</b> |                                                                                                                                                                                                                |          |          |                         |                        |                          |                        |
| 8                                                                                      | Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above) <sup>4</sup>                                                                            |          |          |                         |                        |                          |                        |

**1** Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

**2** As described in SCC 22.2.7

**3** These costs are fixed ceiling and will be included in total price. But the payment shall be at actual upon submission of relevant documents.

**4.** Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmetic correction by Employer as required.

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

**C. LILO of Tongi-Ghorashal 230kV double circuit Line at Kaliganj Substation**

| Item                                                   | Description                                                                                                                                                                                                                                                                                                                         | Unit      | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                                                                                                                                                                                                                                                     |           |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                                                                                                                                                                                                                                                                   | 3         | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4C Installation and Other Services</b> |                                                                                                                                                                                                                                                                                                                                     |           |          |                         |                        |                          |                        |
| <b>1</b>                                               | <b>Survey and soil investigation works</b>                                                                                                                                                                                                                                                                                          |           |          |                         |                        |                          |                        |
| <b>1.1</b>                                             | <b>Survey Work an Compensation</b>                                                                                                                                                                                                                                                                                                  |           |          |                         |                        |                          |                        |
| 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        | 3.5      |                         |                        |                          |                        |
| 1.1.2                                                  | Payment for Compensation(For resettlement of affcetd people, dwelling/commercial structures, trees, crops etc. on the Right of Way)                                                                                                                                                                                                 | km        | 3.5      |                         |                        |                          |                        |
| <b>1.2</b>                                             | <b>Geotechnical Investigations incl. taking samples, logging and lab testing</b>                                                                                                                                                                                                                                                    |           |          |                         |                        |                          |                        |
| 1.2.1                                                  | Boreholes for geotechnical investigation, incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification                                                                                                                                                                                  |           |          |                         |                        |                          |                        |
| (a)                                                    | Level 2                                                                                                                                                                                                                                                                                                                             | borehole  | 1        |                         |                        |                          |                        |
| (b)                                                    | Level 4                                                                                                                                                                                                                                                                                                                             | borehole  | 1        |                         |                        |                          |                        |
| 1.2.2                                                  | Soil resistivity tests (one per tower)                                                                                                                                                                                                                                                                                              | unit      | 14       |                         |                        |                          |                        |
| <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 "2DT6"</b>                                                                                                                                                                                                                                                                                                            |           |          |                         |                        |                          |                        |
| 2.1.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                                                                               | per tower | 1        |                         |                        |                          |                        |
| 2.1.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |
| <b>2.2</b>                                             | <b>Tower type "2QL"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 2.2.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                                                                               | per tower | 1        |                         |                        |                          |                        |
| 2.2.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |
| <b>2.3</b>                                             | <b>Tower type "2Q1"</b>                                                                                                                                                                                                                                                                                                             |           |          |                         |                        |                          |                        |
| 2.3.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                                                                               | per tower | 1        |                         |                        |                          |                        |
| 2.3.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |
| <b>2.4</b>                                             | <b>Tower type "2Q15"</b>                                                                                                                                                                                                                                                                                                            |           |          |                         |                        |                          |                        |
| 2.4.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                                                                               | per tower | 1        |                         |                        |                          |                        |
| 2.4.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                   | Description                                                                                                                                                                                                                                                                | Unit      | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                                                                                                                                                                                            |           |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                                                                                                                                                                                                          | 3         | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4C Installation and Other Services</b> |                                                                                                                                                                                                                                                                            |           |          |                         |                        |                          |                        |
| <b>2.5</b>                                             | <b>Tower type "2Q30"</b>                                                                                                                                                                                                                                                   |           |          |                         |                        |                          |                        |
| 2.5.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                      | per tower | 1        |                         |                        |                          |                        |
| 2.5.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                       | per tower | 1        |                         |                        |                          |                        |
| <b>2.6</b>                                             | <b>Tower type "2QT6"</b>                                                                                                                                                                                                                                                   |           |          |                         |                        |                          |                        |
| 2.6.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                      | per tower | 1        |                         |                        |                          |                        |
| 2.6.2                                                  | Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category                                                                                                                                                                                                       | per tower | 1        |                         |                        |                          |                        |
| <b>2.7</b>                                             | <b>Tower type "2QT6H"</b>                                                                                                                                                                                                                                                  |           |          |                         |                        |                          |                        |
| 2.7.1                                                  | Pile Foundation for any Soil Category                                                                                                                                                                                                                                      | per tower | 1        |                         |                        |                          |                        |
| <b>2.7.2</b>                                           | <b>Piled Foundation with 1.0m/2.0m raised chimney for any Soil Category</b>                                                                                                                                                                                                | per tower | 1        |                         |                        |                          |                        |
| <b>3</b>                                               | <b>Erection of 230kV double circuit &amp; four 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.</b> |           |          |                         |                        |                          |                        |
| <b>3.1</b>                                             | <b>Tower type "2DT6"</b>                                                                                                                                                                                                                                                   |           |          |                         |                        |                          |                        |
| 3.1.1                                                  | Tower type 2DT6+6 m                                                                                                                                                                                                                                                        | each      | 1        |                         |                        |                          |                        |
| 3.1.2                                                  | Tower type 2DT6+15 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |
| <b>3.2</b>                                             | <b>Tower type "2QL"</b>                                                                                                                                                                                                                                                    |           |          |                         |                        |                          |                        |
| 3.2.1                                                  | Tower type 2Q1 +15 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |
| 3.2.2                                                  | Tower type 2Q1 +21 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |
| <b>3.3</b>                                             | <b>Tower type "2Q1"</b>                                                                                                                                                                                                                                                    |           |          |                         |                        |                          |                        |
| 3.3.1                                                  | Tower type 2Q1 +15 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |
| 3.3.2                                                  | Tower type 2Q1 +21 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |
| <b>3.4</b>                                             | <b>Tower type "2Q15"</b>                                                                                                                                                                                                                                                   |           |          |                         |                        |                          |                        |
| 3.4.1                                                  | Tower type 2Q15+ 6 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |
| 3.4.2                                                  | Tower type 2Q15+ 9 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |
| <b>3.5</b>                                             | <b>Tower type "2Q30"</b>                                                                                                                                                                                                                                                   |           |          |                         |                        |                          |                        |
| 3.5.1                                                  | Tower type 2Q30+ 6 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |
| 3.5.2                                                  | Tower type 2Q30+ 9 m                                                                                                                                                                                                                                                       | each      | 1        |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                   | Description                                                                                                                                                                                                                                                                                                                                                                    | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                                                                                                                                                                                                                                                                                                |          |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                                                                                                                                                                                                                                                                                                              | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4C Installation and Other Services</b> |                                                                                                                                                                                                                                                                                                                                                                                |          |          |                         |                        |                          |                        |
| 3.6                                                    | <b>Tower type "2QT6"</b>                                                                                                                                                                                                                                                                                                                                                       |          |          |                         |                        |                          |                        |
| 3.6.1                                                  | Tower type 2QT6+ 6 m                                                                                                                                                                                                                                                                                                                                                           | each     | 1        |                         |                        |                          |                        |
| 3.6.2                                                  | Tower type 2QT6+ 9 m                                                                                                                                                                                                                                                                                                                                                           | each     | 1        |                         |                        |                          |                        |
| 3.7                                                    | <b>Tower type "2QT6H" with any Extension</b>                                                                                                                                                                                                                                                                                                                                   | each     | 2        |                         |                        |                          |                        |
| 3.8                                                    | Auxiliary crossarm for tower type 2QT6                                                                                                                                                                                                                                                                                                                                         | each     | 1        |                         |                        |                          |                        |
| 3.9                                                    | Erection works for Fabricated and non fabricated steel                                                                                                                                                                                                                                                                                                                         | ton      | 5        |                         |                        |                          |                        |
| 4                                                      | <b>Testing of Foundations</b>                                                                                                                                                                                                                                                                                                                                                  |          |          |                         |                        |                          |                        |
| 4.1                                                    | <b>Individual Pile test including supply,install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):</b>                                                                                                                                                         |          |          |                         |                        |                          |                        |
| (a)                                                    | Compression test                                                                                                                                                                                                                                                                                                                                                               | per test | 1        |                         |                        |                          |                        |
| (b)                                                    | Uplift test                                                                                                                                                                                                                                                                                                                                                                    | per test | 1        |                         |                        |                          |                        |
| (c)                                                    | Pile Integrity test                                                                                                                                                                                                                                                                                                                                                            | per test | 56       |                         |                        |                          |                        |
| 5                                                      | <b>Stringing of double/four circuit line, two conductors per phase and 2(two) OPGW (length approx. Route km)</b>                                                                                                                                                                                                                                                               |          |          |                         |                        |                          |                        |
| 5.1.1                                                  | Conductor "ACSR Mallard equivalent ACCC" Phase Conductor (3 Phase, Four Circuit, Twin Bundle per phase on the line)"<br>Installation of insulation strings, compressed dead-ends, compression junction sleeves, suspension clamps, Sagging and clipping, Installation of armour rods and Dampers, Pilot strings and jumpers and any other works required as per specification. | route km | 1        |                         |                        |                          |                        |
| 5.1.2                                                  | 7x4.00mm equivalent , 48 fibres OPGW, including joint box, Tension and semi-tension joints, suspension clamps, armour rods and dampers,Sagging and clipping, Installation of intermediate junction boxes and terminal junction boxes at substation gantries ,Earthing jumpers. Two OPGW earthwire on the line.                                                                 | route km | 1        |                         |                        |                          |                        |
| 6                                                      | <b>Documentation</b>                                                                                                                                                                                                                                                                                                                                                           |          |          |                         |                        |                          |                        |
| 6.1                                                    | Establishment of as-built drawings, manuals and all requested documents as per specifications                                                                                                                                                                                                                                                                                  | lump sum | 1        |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                   | Description                                                                                    | Unit      | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                        |                                                                                                |           |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                      | 2                                                                                              | 3         | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4C Installation and Other Services</b> |                                                                                                |           |          |                         |                        |                          |                        |
| <b>7</b>                                               | <b>Miscellaneous</b>                                                                           |           |          |                         |                        |                          |                        |
| 7.1                                                    | General and other works and services, not mentioned before                                     | lump sum  | 1        |                         |                        |                          |                        |
| 7.2                                                    | Transport of the material and equipment supplied from Employer's Country                       | lump sum  | 1        |                         |                        |                          |                        |
| 7.3                                                    | Insurance of material and equipment supplied from Employer's Country during transport          | lump sum  | 1        |                         |                        |                          |                        |
| 7.4                                                    | Painting of towers including bottom part of towers in accordance with Section 21               | lump sum  | 1        |                         |                        |                          |                        |
| 7.6                                                    | Erection of OPGW connection from terminal tower to substation Gantry/Mast                      | per wire  | 4        |                         |                        |                          |                        |
| 7.7                                                    | Additional counterpoise earthing in accordance with requirement of the Technical specification | per meter | 5        |                         |                        |                          |                        |
| 7.8                                                    | Miscellaneous Rates for works certified by the Engineer in accordance with method of Payment   |           |          |                         |                        |                          |                        |
| (a)                                                    | Additional Excavation                                                                          | cu.m      | 100      |                         |                        |                          |                        |
| (b)                                                    | Additional Concrete                                                                            | cu.m      | 50       |                         |                        |                          |                        |
| (c)                                                    | Additional Reinforcement                                                                       | kg        | 500      |                         |                        |                          |                        |
| (d)                                                    | Extra for surface resisting cement per cu.m of concrete                                        | cu.m      | 50       |                         |                        |                          |                        |
| (e)                                                    | Additional Boring (500mm diameter)                                                             | rm        | 50       |                         |                        |                          |                        |
| (f)                                                    | Additional Boring (600mm diameter)                                                             | rm        | 50       |                         |                        |                          |                        |
| (g)                                                    | Additional Boring (750mm diameter)                                                             | rm        | 50       |                         |                        |                          |                        |

**Design, Supply, Installation, Testing Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| Item                                                                                   | Description                                                                                                                         | Unit     | Quantity | Unit Price <sup>1</sup> |                        | Total Price <sup>1</sup> |                        |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-------------------------|------------------------|--------------------------|------------------------|
|                                                                                        |                                                                                                                                     |          |          | Local Currency [BDT]    | Foreign Currency [USD] | Local Currency [BDT]     | Foreign Currency [USD] |
| 1                                                                                      | 2                                                                                                                                   | 3        | 4        | 5                       | 6                      | 7 = 4 x 5                | 8 = 4 x 6              |
| <b>Schedule No. 4C Installation and Other Services</b>                                 |                                                                                                                                     |          |          |                         |                        |                          |                        |
| (h)                                                                                    | Sand Filling                                                                                                                        | cu.m     | 100      |                         |                        |                          |                        |
| 7.9                                                                                    | Environmental and Social Services                                                                                                   | lump sum | 1        |                         |                        |                          |                        |
| 7.10                                                                                   | STI, STD and HIV/AIDS alleviation program <sup>2</sup>                                                                              | lump sum | 1        |                         |                        |                          |                        |
| 7.11                                                                                   | Costs and Expenses related to test witness <sup>3</sup> (Provisional Sum)                                                           | lump sum | 1        |                         |                        |                          |                        |
| 7.12                                                                                   | Dismantling and by-passing of Tongi-Ghorashal 230kV double circuit Line near Kaliganj Substation area.                              | lump sum | 1        |                         |                        |                          |                        |
| <b>Total Columns 7 &amp; 8 to be carried forward to Schedule No. 5 - Grand Summary</b> |                                                                                                                                     |          |          |                         |                        |                          |                        |
| 8                                                                                      | Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4C(to be quoted in the currency similar as above) <sup>4</sup> |          |          |                         |                        |                          |                        |

**1** Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.

**2** As described in SCC 22.2.7

**3** These costs are fixed ceiling and will be included in total price. But the payment shall be at actual upon submission of relevant documents.

**4.** Bidder shall quote the amount considering clause 14.1 of section 8(Special Conditions of Contract), Volume 1 of 3 of the bidding document. The amount quoted by bidder is subject to arithmetic correction by Employer as required.

**Design, Supply, Installation, Testing & Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| <b>Schedule No. 5 Grand Summary</b> |                                                                                                           |                                         |                                           |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------|
| <b>Item</b>                         | <b>Description</b>                                                                                        | <b>Total Price<sup>1</sup></b>          |                                           |
|                                     |                                                                                                           | <b>Local Currency Portion<br/>[BDT]</b> | <b>Foreign Currency Portion<br/>[XXX]</b> |
| <b>A</b>                            | <b>LILO of Ghorashal-Kaliganj-Purbachal-Bashundhara 400kV double circuit Line at Kaliganj Substation</b>  |                                         |                                           |
| <b>1</b>                            | Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad                                      |                                         |                                           |
| <b>2</b>                            | Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country               |                                         |                                           |
| <b>3</b>                            | Schedule No. 3A Design Services                                                                           |                                         |                                           |
| <b>4</b>                            | Schedule No. 4A Installation and Other Services                                                           |                                         |                                           |
| <b>B</b>                            | <b>LILO of Ghorashal-Kaliganj-Purbachal-Bashundhara 400kV double circuit Line at Purbachal Substation</b> |                                         |                                           |
| <b>1</b>                            | Schedule No. 1B Plant and Mandatory Spare Parts Supplied from Abroad                                      |                                         |                                           |
| <b>2</b>                            | Schedule No. 2B Plant and Mandatory Spare Parts Supplied from Within the Employer's Country               |                                         |                                           |
| <b>3</b>                            | Schedule No. 3B Design Services                                                                           |                                         |                                           |
| <b>4</b>                            | Schedule No. 4B Installation and Other Services                                                           |                                         |                                           |
| <b>C</b>                            | <b>LILO of Tongi-Ghorashal 230kV double circuit Line at Kaliganj Substation</b>                           |                                         |                                           |
| <b>1</b>                            | Schedule No. 1C Plant and Mandatory Spare Parts Supplied from Abroad                                      |                                         |                                           |
| <b>2</b>                            | Schedule No. 2C Plant and Mandatory Spare Parts Supplied from Within the Employer's Country               |                                         |                                           |
| <b>3</b>                            | Schedule No. 3C Design Services                                                                           |                                         |                                           |
| <b>4</b>                            | Schedule No. 4C Installation and Other Services                                                           |                                         |                                           |
|                                     | <b>GRAND TOTAL</b>                                                                                        |                                         |                                           |

1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.
2. Taxes and/or duties from Schedule 1 and 2 may be added to the contract price in accordance with GCC 14 (Taxes and Duties) but excluded from bid evaluation in accordance with ITB 39.2"

**Design, Supply, Installation, Testing & Commissioning of 400kV and 230kV Transmission Lines' LILO at Kaliganj and Purbachal Substation on Turnkey Basis (Package-1)**

| <b>Schedule No. 6. Recommended Spare Parts</b> |                    |             |                 |                                     |                                         |                                     |                                       |
|------------------------------------------------|--------------------|-------------|-----------------|-------------------------------------|-----------------------------------------|-------------------------------------|---------------------------------------|
| <b>Item</b>                                    | <b>Description</b> | <b>Unit</b> | <b>Quantity</b> | <b>Unit Price<sup>1</sup></b>       |                                         | <b>Total Price<sup>1</sup></b>      |                                       |
|                                                |                    |             |                 | <b>Local Currency Portion [BDT]</b> | <b>Foreign Currency Portion [xxxxx]</b> | <b>Local Currency Portion [BDT]</b> | <b>Foreign Currency Portion [xxx]</b> |
| <b>1</b>                                       | <b>2</b>           | <b>3</b>    | <b>4</b>        | <b>5</b>                            | <b>6</b>                                | <b>7 = 4 x 5</b>                    | <b>8 = 4 x 6</b>                      |
|                                                |                    |             |                 |                                     |                                         |                                     |                                       |
|                                                |                    |             |                 |                                     |                                         |                                     |                                       |
|                                                |                    |             |                 |                                     |                                         |                                     |                                       |
|                                                |                    |             |                 |                                     |                                         |                                     |                                       |

1. Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for up to a maximum of three foreign currencies, if so required.