

POWER GRID COMPANY OF BANGLADESH LIMITED



Tender Documents for Procurement of Southwest Transmission Grid Expansion Project Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). Volume 3 of 3

Invitation for Bids No. : 27.21.0000.101.07.314.22.2474, April 18, 2022
OCB No. : PGCB/ADB/L3683-BAN/SWTGEP/230kV&132kV/TL
Country : Peoples 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 **Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis.**

Design

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

1.1.5. The Contractor has to design all towers of the line (**Not Applicable**).

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 Nutan Bidyut Power Plant-Char Fasson 230 kV double circuit transmission line, Reconductoring of the existing Ishurdi-Dhamrai-Ghorasal (1st East-West Interconnector) 230 kV Double Circuit transmission Line, Mohastagorh-Palashbari 132 kV Double Circuit transmission Line, Ishurdi-Natore 132 kV Double Circuit transmission Line, Purbasadipur-Thakurgaon 132 kV Double Circuit transmission Line, Ishurdi-Bheramara 132 kV Double Circuit transmission Line, Rangpur Confidence 113 MW PP-Rangpur 132 kV Double Circuit transmission Line.

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 Bhola, Pabna, Narsingdi, Kustia, Cumilla, Rangpur, Thakurgaon 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. Scope of Supply, delivery, and construction of transmission line(s) are mentioned in the specification and in **Annex 1-1**.

1.2.7. 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.

1.2.8. 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.

1.2.9. 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.

1.2.10. 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.

1.2.11. 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



1.2.12. 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.

1.2.13. 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.

1.2.14. 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.

1.2.15. 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 Drawings and Documents to Be Submitted With Bid

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

1. Outline drawings of all type of towers with clearance diagrams for 230kV & 132kV overland transmission lines; Detailed design calculations showing stress analysis, member and bolt sizes, yield strength of tower materials, foundation reaction etc. These drawings shall be submitted for tender purpose only. All types of tower designs shall be submitted during execution for approval and should any change from these drawings/designs require fulfilling the requirement of technical specification during execution; such changes shall be made by the Contractor in the contract price. **(Only applicable for new tower design)**
2. Foundation drawings of all types of towers. The piled system the Bidder intends to use for the foundations along with dimensions of piles, the materials of the shaft and pile cap and the maximum possible length of pile that can be installed with the Bidder's proposed pile system. Further, the Bidders shall give information about the piling method, such as details of casing, methods of soil excavation, type of reinforcement for both pile and pile cap and the facility to transport all equipment.
3. Detailed drawings of all types of insulators and insulator sets including cross section sketch of head portion of all types of disc insulators.
4. Cross-sectional drawings of conductors and detailed drawings of its accessories
5. Cross-sectional drawings of OPGW and detailed drawings of OPGW accessories
6. Test Certificates
 - 6.1 Not used
 - 6.2 OPGW - Type test reports of similar OPGW (type tests shall be as stated in Volume 2, Clause 14.7.2.1 of the bidding documents) from Manufacturer's own laboratory / independent testing laboratory.
 - 6.3 Insulators (insulator units):

Type test certificates issued from independent testing laboratory outside manufacturer's own country, which shall include the following tests, performed on all the offered types of insulators as per IEC except power arc test, which shall conform to test procedures outlined in Clause 9.6, Volume 2 of 3 of the bidding documents:

- Dry lightning impulse voltage withstand test;



- Wet power frequency voltage withstand test;
- Electro-mechanical failing load test;
- Thermal mechanical performance test;
- Impulse voltage puncture test;
- Power arc test.

The Independent Testing Laboratories shall comply with the following requirements:

1. Valid ISO-IEC/17025 Certificate issued from Accreditation body.
2. Scope of accreditation for the laboratory shall include the required type tests.
3. The Accreditation body shall be one of the Signatories under ILAC, IFA or IEEEEC.
4. Provide laboratory address and location details.

7. Technical catalogues, Quality Assurance Certificate BS EN ISO 9001 /ISO 9002 (or equivalent) and quality assurance programme & typical quality plan for the work from the Manufacturers of the following equipment:

- Tower
- Conductor & accessories.
- OPGW and OPGW accessories.
- Insulator and insulator hardware fittings.

1.9 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 contract works.
- 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.
- a. 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.



Annex 1-1: Scope and Extent of Definite Works

Scope A:

Design, Supply, Installation, Testing & Commissioning of Nutan Bidyut Power Plant–Char Fasson 230 kV double circuit Transmission Lines on Turnkey Basis

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

- (i) Nutan Bidyut Power Plant–Char Fasson 230 kV double circuit transmission line (Approx. 41.00 km) using Single ACSR Mallard Conductor per phase, one 7X4.00 mm GSW earthwire and one 7X4.00 mm GSW equiv. OPGW .
- (ii) Approx. 300 m transmission line will be constructed by using 230 kV double circuit vertical formation pole in the premises of Nutan Bidyut Power Plant.

Scope B:

Procurement of Design, Supply, Erection, Testing and Commissioning of 230 kV & 132 kV Transmission Lines

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

- iii. Reconductoring of the existing Ishurdi-Dhamrai-Ghorasal (1st East-West Interconnector) 230 kV Double Circuit transmission Line: 175 km including approx. 13.5 km river crossing (please refer to Annexure-A for detail information) and Reconductoring of LILO at Dhamrai of Ishurdi-Ghorasal 230 kV line (1 km).

All existing hardware fittings-parts/accessories subjected to the system voltage with the phase conductor shall be replaced. The new conductor type shall be ACCC conductor equivalent to ACSR Mallard dia. New OPGW conductoring replacing existing GW including up gradation of terminal equipment connected to line if required.

- iv. Reconductoring of the existing Mohastagorh-Palashbari 132 kV Double Circuit transmission Line: 36 km

All existing hardware fittings-parts/accessories subjected to the system voltage with the phase conductor shall be replaced including up gradation of terminal equipments connected to line if required. The new conductor type shall be ACCC conductor equivalent to ACSR Grosbeak dia.

- v. Reconductoring of the existing Ishurdi-Natore 132 kV Double Circuit transmission Line: 45.1 km and Reconductoring of LILO at Bonpara of Ishurdi-Natore 132 kV line (1 km).

All existing hardware fittings-parts/accessories subjected to the system voltage with the phase conductor shall be replaced including up gradation of terminal equipments connected to line if required. The new conductor type shall be ACCC conductor equivalent to ACSR Grosbeak dia.

- vi. Reconductoring of the existing Purbasadipur-Thakurgaon 132 kV Double Circuit transmission Line: 47 km

All existing hardware fittings-parts/accessories subjected to the system voltage with the phase conductor shall be replaced including up gradation of terminal equipments connected to line if required. The new conductor type shall be ACCC conductor equivalent to ACSR Grosbeak dia.

- vii. Reconductoring of the existing Ishurdi-Bheramara 132 kV Double Circuit transmission Line: 10 km

All existing hardware fittings-parts/accessories subjected to the system voltage with the phase conductor shall be replaced including up gradation of terminal equipment connected to line if required. The new conductor type shall be ACCC conductor equivalent to ACSR Grosbeak dia.

- viii. Reconductoring of the existing Rangpur Confidence 113 MW PP-Rangpur 132 kV Double Circuit transmission Line: 10.4 km

All existing hardware fittings-parts/accessories subjected to the system voltage with the phase conductor shall be replaced including up gradation of terminal equipment connected to line if required. The new conductor type shall be ACCC conductor equivalent to ACSR Grosbeak dia.

- For reconductoring of the existing transmission lines, bidders shall consider the following:

a. Classification of towers to be assessed by Contractor from the existing towers / available data.

b. For each existing transmission line, the existing insulators will remain unchanged except for those insulators found defective during the reconductoring works. The disc insulators on all transmission lines shall be inspected by the contractor for any defects and those which are found defective shall be replaced by new insulators supplied within this contract as spares. Prior notification to/ approval of the Employer shall be a pre-requisite for such replacement/use of insulators.

c. Generally the existing insulators on the above lines are Cap & Pin type disc insulators with Ball & Socket coupling type: 16mm (IEC), where the insulators are mainly of 70kN and 120kN or similar electro-mechanical failing (EMF) load ratings. But some of the insulators may differ from this type/size in respect of EMF load rating and/or Ball & Socket coupling type/size. The bidder/contractor shall have to check the insulators existing on each transmission line to find out whether insulators of other types are existing there, and they shall have to determine the sizes of hardware fittings to be fitted with the insulators. Further, the existing insulators/fittings sets of all kinds, viz suspension/ heavy suspension/ tension/ low duty tension on the 230kV or 132kV transmission lines are generally of single string with 70kN or 120kN or 210kN or similar ratings. But, there may be existing, especially for river crossing, road/rail crossing etc, any 230kV or 132kV tower(s)/structure(s) having insulator/fittings sets with double/triple strings with 120kN or 210kN or other EMF ratings. The bidder is required to check/verify regarding this matter, and if such kind(s) of fittings sets are found on any existing tower(s)/structure(s), that fittings sets shall be replaced by the bidder/Contractor with new fittings sets suitable for the new ACCC conductor equivalent to ACSR Mallard/Grosbeak

dia., at the unit price of any hardware fittings set item available in the bid/contract price schedule. The bidder (Contractor) shall have to design, manufacture, supply and install all types of hardware fittings required for completing the works in order to ensure the full ampacity of the new ACCC conductor equivalent to ACSR Mallard/Grosbeak dia.. Immediately after award of the Contract, the Contractor shall complete their above checking to finalize all the details, and prepare the final Bill of Quantity (BOQ) subject to approval of the Employer. The Contractor shall have to supply and install all items at their quoted unit prices, whatever the content or unit of the item(s) may be.

d. After dismantling by the Contractor of existing conductors and hardware fittings/insulators (as necessary) from the existing transmission line, the dismantled conductors and other line materials are envisaged for re-use by the Employer in other projects. During de-stringing/dismantling, proper handling and safety of the conductors and associated line materials, measurement of conductor lengths, rewinding on drums/packing, and safe transportation of dismantled materials to PGCB's local grid maintenance division store shall be included in the scope of work.

e. The contractor shall inspect the entire stretch of each of the transmission lines listed above and shall accordingly devise appropriate methodology/procedure of carrying out the reconductoring works. The contractor shall deploy appropriate tools /equipment/ machinery to ensure that the stringing operation is carried out without causing any damage to conductor and existing tower/structure and to ensure that the conductor is installed at the prescribed sag-tension as per the approved stringing charts. After award of the contract, the contractor shall carry out the detailed survey and submit to the employer Sag-Tension calculations corresponding to specified/prevaling conditions and the ruling span and all the spans in intervals of 50 meter as per detailed survey.

f. Survey & profiling of existing line routes using Total stations; verification of availability of statutory electrical clearances using PLS-CADD software; destringing of existing conductors including dismantling of associated fittings/insulators (as required) on the above lines and re-stringing (as well as newstringing as/if needed) each circuit with the ACCC conductor equivalent to ACSR Mallard/Grosbeak dia. Including associated new hardware fittings/ insulators (as required) with the other circuit under live condition.

g. Design and manufacture of the hardware fittings, fittings-parts/components, and accessories shall be such that they shall be completely compatible with the ACCC conductor equivalent to ACSR Mallard/Grosbeak dia. of the line conductor and smoothly fitted with the existing fittings-parts not to be replaced and shall ensure the full capacity of the ACCC conductor equivalent to ACSR Mallard/Grosbeak dia. being installed.

h. It is the contractor's responsibility to check each 230 kV or 132kV transmission line/substation to assess by themselves the existing facilities viz various types of towers/other structures, various types of insulator sets/hardware fittings /accessories, various types of substation equipment etc ; and all the required plant and equipment i.e. conductor, line hardware fittings/accessories, connecting fittings/accessories for substation, insulators (as/if required) etc shall be designed, manufactured and installed in the system by the contractor for completion of whole of the Facilities. The conductors, hardware fittings/accessories, insulators and all other plant/equipment shall be designed and manufactured following the specifications stipulated in individual sections and schedules throughout the bidding documents and in accordance with the relevant IEC/BS EN/ASTM/ISO/DIN standards mentioned therein. The contractor shall have to fulfill all the requirements specified throughout the bidding

documents.

i. The material covered in this bid shall be supplied complete in all respects, including all components, fittings and accessories which are necessary or are usual for their efficient performance and satisfactory maintenance under the various operating and atmospheric conditions. The Contractor shall be responsible for ensuring compatibility between/among the equipment and associated fittings/ accessories, and satisfactory performance of complete conductor system for continuous operation at the designated continuous operating temperature of the offered ACCC conductor equivalent to ACSR Mallard/Grosbeak dia.. Such parts shall be deemed to be within the scope of the Contract whether specially included or not in the Specification or in the Contract Schedules.

j. PGCB will arrange shut down of one circuit at a time and the other circuit shall be kept under charged condition. The contractor shall de-string/dismantle the existing conductor and associated hardware fittings/insulators as required, and re-string the circuit with the ACCC conductor equivalent to ACSR Mallard/Grosbeak dia. and associated new hardware fittings-parts in combination with existing fittings-parts and insulators, section by section, and restore the line in original conditions as per program finalized in coordination with site. Appropriate safety measures along with necessary safety tools and equipment to carry out de-stringing/dismantling and stringing operations under the above conditions including mechanical/ structural safety of the towers shall be the responsibility of the contractor. Necessary calculations shall be carried out by the contractor to ensure that the loadings on the towers due to conductor tensions as well as loads on account of the reconductoring activities shall be within specified limits. These calculations shall be submitted by the contractor during detailed engineering.

k. The entire stringing work of conductor shall be carried out by tension stringing technique except where geographical/ topographical or other site constraints do not permit use of tension stringing equipment. In such cases manual stringing along with other appropriate tools and equipment may be employed with the approval of the Project Manager. The bidder shall indicate in their proposal the special equipment for reconductoring works, if any, and indicate no. of that equipment which the bidder plans to deploy during erection/stringing works. The stringing work of conductor on the existing towers in each transmission line under the Contract will be carried out from angle tower to nearest angle tower.

l. The bidder/ contractor will inspect all the towers existing on each transmission line and check whether any tower(s) require strengthening/ repair due to tower member missing, corrosion of members or any other type damage/deformation of members resulting to insufficient structural strength of the tower(s). Identification of such towers and strengthening/ repair of them including supplies of the required tower materials is included in the contractor's scope. Those tower materials are referred to as 'Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc' in the price schedules. The quantity of towers which may require strengthening /repair as mentioned in the price schedules of the bidding document is indicative only. Actual quantity will be finalized during execution of the Works. Required size of members, nuts-bolts, accessories will be decided by the Contractor subject to approval of the Employer. The tower materials will be manufactured by contractor's proposed manufacturer following the standards/ provisions mentioned in Section 8 (Towers), volume 2 of the bidding document.

m. The existing OPGW/earthwire of each of the transmission lines will remain

unchanged except Ishurdi-Dhamrai-Ghorasal (1st East-West Interconnector) 230 kV Double Circuit transmission Line, though, however, if re-stringing of the existing OPGW/earthwire in any section(s) is required for sag-matching with the new phase ACCC conductor equivalent to ACSR Mallard/Grosbeak dia., that shall be done by the contractor without any additional cost to the employer. New OPGW replacing existing GW for Ishurdi-Dhamrai-Ghorasal (1st East-West Interconnector) 230 kV Double Circuit transmission Line.

n. It is preferable that no mid span joint be used in the reconductoring and hence the length of conductor on the drums to be decided by referring to the tower schedule.

o. The termination of each transmission line to each relevant substation equipment up to each 230 kV or 132kV bus in the 230 kV or 132kV substation at both ends of the transmission line is included in the contractor's scope. The details regarding the termination in each 230 kV or 132kV substation related to the above transmission lines are as below : In each 230 kV or 132kV substation, the line phase conductors coming from the terminal tower will be terminated by the Contractor to the gantry of the 230 kV or 132kV substation; and from the gantry up to each 230 kV or 132kV bus, through each existing substation equipment viz LA, PT/VT, ES, DS, CT, CB etc, in each relevant bay/circuit of the substation, the existing phase conductors for jumper/loop/dropin/down-drop etc will be replaced by the Contractor with new twin ACSR Mallard/Grosbeak conductor per phase along with new connecting fittings/accessories suitable for the twin ACSR Mallard/Grosbeak per phase. Such termination/replacement up to each 230 kV or 132kV bus at relevant substation is required for each 230 kV or 132kV transmission line under reconductoring in this package/contract. All the connecting fittings/accessories (i.e. the fittings/accessories which connect/fix the phase conductor to the bay equipment viz LA, CT/PT, ES, DS, CB, busbar conductors etc, including the spacer for twin ACSR Mallard/Grosbeak conductor) required in each relevant 230 kV or 132kV substation shall be designed, manufactured, supplied and installed by the Contractor. Those fittings/accessories shall be of such design & materials that those can smoothly connect/fix the phase conductor to the existing substation equipment and can continuously conduct the rated current of twin ACSR Mallard/Grosbeak i.e. two times the rated current of ACSR Mallard/Grosbeak without raising the temperature of the fittings and the contact points of fittings/phase conductor (ACSR Mallard/Grosbeak)/substation equipment, above rated operating temperature of ACSR Mallard/Grosbeak (80 degree C). Since the phase conductors inside the 132kV substation - from gantry up to 230 kV or 132kV bus through all existing bay-equipment - shall be twin ACSR Mallard/Grosbeak per phase, all engineering and design related to the sub-conductor configuration and all other aspects in this regard shall have to be done/provided by the Contractor subject to approval of the Employer. Further, since the transmission lines are to be reconducted with ACCC conductor equivalent to ACSR Mallard/Grosbeak dia. while the relevant bay phase conductors are with ACSR Mallard/Grosbeak, hence near the gantry of the substation, two different types of conductor – ACCC conductor equivalent to ACSR Mallard/Grosbeak dia. and twin ACSR Mallard/Grosbeak, will have to be joined together through a connector called T-connector /T-pad or any other kind of fittings as appropriate. This connector shall be of such design & materials (bi-metal or any other type as appropriate) that the temperature of the ACSR Mallard/Grosbeak and the connector will not rise above the rated operating temperature of ACSR Mallard/Grosbeak (80 degree C) while maximum continuous operating current which is two times the maximum continuous operating current of ACSR Mallard/Grosbeak will be flowing through the circuit at prevailing conditions. Similar consideration shall have to be taken into account by the bidder/contractor for making the connection/joint between the busbar conductor and bay phase conductor.

The Contractor shall be responsible for assessment and determination of each and every type of fittings/accessories required in the termination in each relevant

230 kV or 132kV substation. Design, manufacture, supply and installation of all those fittings/ accessories is included in the Contractor's scope. It shall be deemed that the design/drawings/other engineering data/documents of the existing equipment /fittings are not available with the employer. All such matters as required for the termination shall have to be collected/prepared by the bidder/contractor themselves based on the existing equipment/system. The bidder/contractor shall complete their all checking/survey/studies required in this regard in appropriate time such that the design and quantity of all the substation fittings can be finalized (subject to approval of the employer) immediately after signing the contract so that the contractor can timely place manufacturing order to the manufacturer (approved by the employer) in order to complete the works under the contract in time. Replacement of busbar conductor and bay equipment viz LA, PT/VT, ES,DS,CT, CB etc is not included in this contract. All costs for above mentioned terminations shall be deemed to be included in the contract price.

p. Appropriate safety measures along with necessary safety tools and equipment to carry out dismantling and installation operations under the prevailing conditions including mechanical/ structural safety of each existing structure/equipment shall be the responsibility of the contractor.

q. Any additional arrangement/work/supplies required to complete the above reconductoring works, which is not expressly mentioned in the specification, will be done/provided by the contractor without any additional cost

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

- a. Detailed survey including route alignment, profiling, tower/Pole spotting, optimization of tower/Pole 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/Pole locations on ground conforming to the approved profile and tower/Pole schedule.
- c. Fabrication, testing and supply of all types of transmission line towers/Pole including stubs, fasteners, anti-theft fasteners, step bolts, hangers, D-shackles, number plate, danger plate, tower/Pole earthing etc.

PGCB's existing designed towers/Pole shall be used. The Employer shall provide structural/erection drawings, available shop drawings and available bill of materials of all types of transmission line towers/Pole 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.

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

- d. Fabrication, testing and supply of all types of tower/Pole 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.

- e. Design, manufacture, testing and supply of conductors, insulators, OPGW, hardware fittings and conductor & OPGW accessories.
- f. Design of foundations for different types of towers/Pole, testing of foundations and casting of foundations (including special foundation locations, viz. pile/well foundation locations, if any) for tower/Pole footings;
- g. Erection of towers/Pole, tower/Pole earthing, fixing of insulator strings, stringing of conductors, OPGW along with all necessary line accessories,
- h. Painting of towers/Pole & supply and erection of span markers, obstruction lights (wherever applicable) for aviation requirements (as required);
- i. 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.
- j. Testing & commissioning of the erected transmission lines and
- k. 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.
- l. River Crossing

No mid span joint will be allowed in river crossing portion i.e. Anchor tower to Anchor tower. Hence, the length of conductor shall be fixed by the Contractor carefully to minimize the wastage.

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.

- m. Major Contract Components:
 - i. Tower: 230 kV double circuit vertical formation lattice steel tower.
 - ii. Pole: 230 kV double circuit vertical formation pole.
 - iii. Conductor: Single ACSR Mallard Conductor per phase for overland portion. ACCC conductor equivalent to ACSR Mallard/Grosbeak dia. for Reconductoring.
 - iv. Earthwire: 7X4.00 mm GSW earthwire and 7X4.00 mm GSW equiv. OPGW for overland portion. Insulators & Hardware fittings

The scope of works have 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

Scope A:

Nutan Bidyut Power Plant–Char Fasson 230 kV double circuit transmission line.

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.

Scope B:

- i. Reconductoring of the existing Ishurdi-Dhamrai-Ghorasal (1st East-West Interconnector) 230 kV Double Circuit transmission Line: 175 km
- ii. Reconductoring of the existing Mohastagorh-Palashbari 132 kV Double Circuit transmission Line: 36 km
- iii. Reconductoring of the existing Ishurdi-Natore 132 kV Double Circuit transmission Line: 45.1 km
- iv. Reconductoring of the existing Purbasadipur-Thakurgaon 132 kV Double Circuit transmission Line: 47 km
- v. Reconductoring of the existing Ishurdi-Bheramara 132 kV Double Circuit transmission Line: 10 km
- vi. Reconductoring of the existing Rangpur Confidence 113 MW PP-Rangpur 132 kV Double Circuit transmission Line: 10.4 km

The new phase conductors replacing the existing phase conductors of the transmission line will be terminated at the gantry structures by the Contractor; and the termination/replacement work of relevant phase conductors inside the 230 kV or 132kV substation - from gantry up to each 230 kV or 132kV bus at both 230 kV or 132kV substations is also included in the Contractor's scope.

The line conductor ACCC conductor equivalent to ACSR Mallard/Grosbeak dia. will be terminated from the terminal tower to the gantry of the relevant 230 kV or 132kV substation. From the gantry to each 230 kV or 132kV bus – through each existing bay equipment viz LA, PT/VT, ES, DS, CT, CB etc, all phase conductors for jumper/loop/drop-in/drop-out/down-drop etc, along with the connecting fittings/accessories in each relevant bay/circuit will be replaced by the Contractor with twin ACSR Mallard/Grosbeak per phase along with new connecting fittings/accessories suitable for the twin ACSR Mallard/Grosbeak. Connection between line phase conductor and bay phase conductor as well as between existing bus conductor and bay phase conductor shall have to be made by the Contractor.

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 **720 (Seven Hundred Twenty) days** from the effective date as de- scribed 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 24 months.)

Work under this contract shall be completed within 24 (months) months from contract effective date.

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis.	Duration	Months																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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-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

2.1.3 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.

2.1.5 Pole

2.1.5.1 Particulars of Steel

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

2.2 Piled Foundation Details (Towers)

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

Tower Type Particulars	4DL (Highest extension)	4D1 (Upto 25m extension)	4D1 (above 25m to 40m extension)	4D25 (Highest extension)	4D45 (Highest extension)	4DT6 (Highest extension)	4DR-Not Required (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-**Not Applicable**)

Tower Type Particulars	4DL (Highest extension)	4D1 (Upto 25m extension)	4D1 (above 25m to 40m extension)	4D25 (Highest extension)	4D45 (Highest extension)	4DT6 (Highest extension)	4DR-Not Required (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 (Highest extension)	2D1 (Highest extension)	2D25 (Highest extension)	2DT6 (Highest extension)	2D9 (Highest extension)	2QL (Highest Extension)	2Q1 (Highest Extension)	2Q30 (Highest Extension)	2QT6 (Highest Extension)	2DR (Highest Extension)	2DAX (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 (Highest extension)	1D1 (Highest extension)	1D25 (Highest extension)	1DT6 (Highest extension)	1DR (Highest extension)	1DAX (Highest extension)	1QL (Highest Extension)	1Q15 (Highest Extension)	1Q30 (Highest Extension)	1QT6 (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.

2.2.5 Piled Foundation Details (Pole)

2.2.5.1 230kV Poles

Tower Type Particulars	2DLP (Highest extension)	2D1P (Highest extension)	2D25P (Highest extension)	2DT6P (Highest extension)	2D9P (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 (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 ²)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm ²)				
Cross Sectional Area of Composite Core (mm ²)				
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-**Not Applicable**

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 ²)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm ²)				
Cross Sectional Area of Composite Core (mm ²)				
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 230kV Line

2.3.3.1 230 kV Line - Overland Portion (Single 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 ²)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm ²)				
Cross Sectional Area of Composite Core (mm ²)				
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

2.3.3.2 230 kV Line - Overland Portion (Single 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 (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 ²)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm ²)				
Cross Sectional Area of Composite Core (mm ²)				
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 - River Crossing Portion (Smooth body ACSR special conductor (27.91mm) 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 ²)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm ²)				
Cross Sectional Area of Composite Core (mm ²)				
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)

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 ²)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm ²)				
Cross Sectional Area of Composite Core (mm ²)				
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 ²)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm ²)				
Cross Sectional Area of Composite Core (mm ²)				
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)

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 ²)				
Rated tensile strength of conductor (kN)				
Weight (kg/km)				
Direction of external lay				
Cross Sectional Area of Al (mm ²)				
Cross Sectional Area of Composite Core (mm ²)				
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-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 ²				
Coefficient of linear expansion	1/degree				
DC resistance at 20°C	ohms/m				
Maximum short circuit current capacity	kA ² 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				
Optical Characteristics:					
Cut-off wave length	nm				
Attenuation at Nm	dB/km				
Zero dispersion wave length	nm				
Chromatic dispersion at nm	ps/km				
Individual splice loss	dB				
Bit error rate					
OPGW Fittings:					
Guaranteed ultimate tensile strength	kN				
	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 ²				
Coefficient of linear expansion	1/degree				
DC resistance at 20°C	ohms/m				
Maximum short circuit current capacity	kA ² 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				
Optical Characteristics:					
Cut-off wave length	nm				
Attenuation at Nm	dB/km				
Zero dispersion wave length	nm				
Chromatic dispersion at nm	ps/km				
Individual splice loss	dB				
Bit error rate					
OPGW Fittings:					
Guaranteed ultimate tensile strength					
• Suspension set	kN				
• Tension set	kN				
Overall length of set					



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	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

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 ²				
Coefficient of linear expansion	1/degree				
DC resistance at 20°C	ohms/m				
Maximum short circuit current capacity	kA ² 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				
Optical Characteristics:					
Cut-off wave length	nm				
Attenuation at Nm	dB/km				
Zero dispersion wave length	nm				
Chromatic dispersion at nm	ps/km				
Individual splice loss	dB				
Bit error rate					
OPGW Fittings:					
Guaranteed ultimate tensile strength					
• Suspension set	kN				
• Tension set	kN				
Overall length of set					



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	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-**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

2.5.3 230kV Line - Overland Portion (ACSR Single 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/ 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

2.5.4 230kV Line - Overland Portion (ACSR Single 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/ 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

2.5.5 230kV Line – River Crossing Portion (Smooth body ACSR special conductor (27.91mm) equivalent ACCC Conductor)

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

2.5.6 132kV Line- Overland Portion (ACSR Grosbeak equivalent ACCC 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

2.5.7 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

2.5.8 132kV Line- ACSR Grosbeak 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

2.6 Spacers and Spacer Dampers (Not Applicable)

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	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

132kV 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

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

A1. Nutan Bidyut Power Plant-Char Fasson 230kV Double Circuit Line								
Item	Description	Country of origin ²	Unit	Quantity	Unit Price ¹		Total Price ¹	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx]	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad								
1. Supply of 230 kV double circuit towers/Poles, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.								
1.1	Tower type 2DL Standard		each	5				
1.2	Tower type 2DL+1.5 m		each	5				
1.3	Tower type 2DL+3 m		each	5				
1.1.4	Tower type 2DL+4.5 m		each	5				
1.1.5	Tower type 2DL+6 m		each	13				
1.1.6	Tower type 2DL+9 m		each	15				
1.1.7	Tower type 2DL+12 m		each	13				
1.1.8	Tower type 2DL+15 m		each	10				
1.2	Tower type "2D1"							
1.2.1	Tower type 2D1 Standard		each	1				
1.2.2	Tower type 2D1 +1.5 m		each	1				
1.2.3	Tower type 2D1 +3 m		each	1				
1.2.4	Tower type 2D1 +4.5 m		each	1				
1.2.5	Tower type 2D1 +6 m		each	1				
1.2.6	Tower type 2D1 +9 m		each	2				
1.2.7	Tower type 2D1 +12 m		each	2				
1.2.8	Tower type 2D1 +15 m		each	3				
1.2.9	Tower type 2D1 +18 m		each	3				
1.2.10	Tower type 2D1 +21 m		each	2				
1.3	Tower type "2D25"							
1.3.1	Tower type 2D25 Standard		each	1				
1.3.2	Tower type 2D25 +1.5 m		each	1				
1.3.3	Tower type 2D25+3 m		each	2				
1.3.4	Tower type 2D25 +4.5 m		each	1				
1.3.5	Tower type 2D25 +6 m		each	2				
1.3.6	Tower type 2D25 +9 m		each	3				

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Country of origin ²	Unit	Quantity	Unit Price ¹		Total Price ¹	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx]	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad								
1.3.7	Tower type 2D25 +12 m		each	3				
1.3.8	Tower type 2D25 +15 m		each	2				
1.4	Tower type "2DT6"							
1.4.1	Tower type 2DT6 Standard		each	1				
1.4.2	Tower type 2DT6+1.5 m		each	1				
1.4.3	Tower type 2DT6+3 m		each	2				
1.4.4	Tower type 2DT6+4.5 m		each	1				
1.4.5	Tower type 2DT6+6 m		each	2				
1.4.6	Tower type 2DT6+9 m		each	3				
1.4.7	Tower type 2DT6+12 m		each	2				
1.4.8	Tower type 2DT6+15 m		each	2				
1.5	Tower type "2D9"							
1.5.1	Tower type 2D9+6 m		each	1				
1.5.2	Tower type 2D9+9 m		each	1				
1.6	Pole							
1.6.1	Pole type 2DT6P		each	2				
1.7	Auxiliary Crossarm for pole type 2DT6P		per set of three	1				
1.8	Auxiliary crossarm for tower type 2DT6		per set of three	3				
1.9	Galvanized Tower Steel							
(a)	Fabricated		ton	10				
(b)	Non-fabricated		ton	10				
2	Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints							
2.1	"ACSR Mallard" Phase Conductor (3 Phase, Double Circuit, Single Conductor per phase on the line)		Route km ³	41				
2.2	7x4.00mm equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. One OPGW earthwire on the line.		Route km ³	41				
2.3	7x4.00mm earthwire. One earthwire on the line.		Route km ³	41				

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Country of origin ²	Unit	Quantity	Unit Price ¹		Total Price ¹	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx]	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad								
3	Insulator strings, with associated suspension and tension clamps for twin ACSR Mallard Conductor							
3.1	a) Single suspension string, 120 kN -disc only		Set	528				
	b) Single suspension string, 120 kN -fittings only		Set	528				
3.2	a) Single suspension string (Heavy Suspension), 210 kN -disc only		Set	192				
	a) Single suspension string (Heavy Suspension), 210 kN -fittings only		Set	192				
3.3	a) Single tension string, 210kN -disc only		Set	372				
	b) Single tension string, 210kN -fittings only		Set	372				
3.4	a) Single jumper suspension I-string, having each string 1x120 kN-disc only		Set	48				
	b) Single jumper suspension I-string, having each string 1x120 kN-fittings only		Set	48				
3.5	a) Single tension string, upright low duty 120kN- disc only		Set	12				
	b) Single tension string, upright low duty 120kN- fittings only		Set	12				
3.6	a) Single tension string, inverted low duty 120kN -discs only		Set	12				
	b) Single tension string, inverted low duty 120kN -fittings only		Set	12				
3.7	Counterweights for 210kN suspension insulator sets complete with yoke plate attachment bolts to be used for 2D1 towers:							
(a)	- 40kg set		each	3				
(b)	- 80kg set		each	3				
(c)	- 120kg set		each	5				
	Earthwire sets, complete with all accessories							
3.8	Suspension set		set	88				
3.9	Tension set		set	62				
	OPGW sets, complete with all accessories, incl. armour rods and earth bounds							
3.10	Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	88				
3.11	Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)		set	62				
	Dampers							
3.12	Vibration damper for phase conductor		per span	120				
3.13	Spacer damper for phase conductor		per span	120				

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Country of origin ²	Unit	Quantity	Unit Price ¹		Total Price ¹	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx]	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad								
3.14	Vibration damper for earthwire		per span	120				
3.15	Vibration damper for OPGW		per span	120				
3.16	Spacer for jumper		nos.	93				
4	Aerial Markers							
4.1	Painting of tower having height more than 60 meter in accordance with the requirements of the Technical Specification		per tower	5				
4.2	Painting of tower (Reflecting Paint) upto 3 meter in submerge area in accordance with the requirements of the Technical Specification		per tower	5				
4.3	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc.		each	12				
4.4	Aircraft warning spheres		each	12				
4.5	Bird diverters		each	15				
4.6	Bird guards, one bird guard per each crossarm applied on intermediate towers		each	528				
5	Mandatory Spare Parts and Tools							
5.1	Insulator and Fittings							
	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn. Arcing ring etc							
5.1.1	120kN single suspension Insulators set for "ACSR Mallard" - Complete Assembly		set	5				
5.1.2	120kN jumper suspension set for "ACSR Mallard" - Complete Assembly		set	10				
5.1.3	210kN Single tension set for "ACSR Mallard" - Complete Assembly		set	20				
5.2	Phase conductor, earthwire, OPGW & Fittings							
5.2.1	Phase conductor "ACSR Mallard" conductor		km	7				
5.2.2	Midspan Joint for "ACSR Mallard " conductor		each	5				
5.2.3	Repair sleeve for "ACSR Mallard" conductor		each	5				
5.2.4	Spacer Damper for "ACSR Mallard"		each	7				
5.2.5	Jumper Spacer for "ACSR Mallard"		each	7				
5.2.6	Earthwire 7x4.00mm		km	7				
5.2.7	Midspan Joint for 7x4.00mm earthwire		each	3				
5.2.8	Suspension set for 7x4.00mm earthwire		each	10				

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Country of origin ²	Unit	Quantity	Unit Price ¹		Total Price ¹	Taxes and Duties
					Foreign Currency [xxx]	CIP	Foreign Currency [xxx]	Local Currency [BDT]
1	2	3*	4	5	6	7	8= 5 x 7	9
Schedule No. 1A Plant and Mandatory Spare Parts Supplied from Abroad								
5.2.9	Tension set for 7x4.00mm earthwire		each	10				
5.2.10	Vibration damper for 7x4.00mm earthwire		each	15				
5.2.11	7x4.00mm Equivalent OPGW		km	10				
5.2.12	Suspension set for 7x4.00mm Equivalent OPGW		each	12				
5.2.13	Tension set for 7x4.00mm Equivalent OPGW		each	12				
5.2.14	Vibration damper for 7x4.00mm Equivalent OPGW		each	15				
5.3	Temporary earthing equipment		each	1				
5.4	Elcometer		each	1				
5.5	Motorised jointing compressor for conductor complete with dies suitable for conductors & earthwires to be used for this Contract		each	2				
Total Columns 8 to be carried forward to Schedule No. 5 - Grand Summary								

Name of Bidder	_____
Signature of Bidder	_____

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

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

A2. Nutan Bidyut Power Plant-Char Fasson 230kV Double Circuit Line						
Item	Description	Unit	Quantity	Local Currency in BDT		Sales and Other Taxes
				Unit EXW Price ¹	EXW Total Price	Local Currency [BDT]
1	2	3	4	5	6=4*5	7
Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country						
1. Supply of 230 kV double/Poles, complete with all stubs, nuts, bolts, locking nuts, washers, phase conductors and earthwire, swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing, etc.						
1.1	Tower type "2DL"					
1.1.1	Tower type 2DL Standard	each	5			
1.1.2	Tower type 2DL+1.5 m	each	5			
1.1.3	Tower type 2DL+3 m	each	5			
1.1.4	Tower type 2DL+4.5 m	each	5			
1.1.5	Tower type 2DL+6 m	each	13			
1.1.6	Tower type 2DL+9 m	each	15			
1.1.7	Tower type 2DL+12 m	each	13			
1.1.8	Tower type 2DL+15 m	each	10			
1.2	Tower type "2D1"					
1.2.1	Tower type 2D1 Standard	each	1			
1.2.2	Tower type 2D1 +1.5 m	each	1			
1.2.3	Tower type 2D1 +3 m	each	1			
1.2.4	Tower type 2D1 +4.5 m	each	1			
1.2.5	Tower type 2D1 +6 m	each	1			
1.2.6	Tower type 2D1 +9 m	each	2			
1.2.7	Tower type 2D1 +12 m	each	2			
1.2.8	Tower type 2D1 +15 m	each	3			
1.2.9	Tower type 2D1 +18 m	each	3			
1.2.10	Tower type 2D1 +21 m	each	2			
1.3	Tower type "2D25"					
1.3.1	Tower type 2D25 Standard	each	1			
1.3.2	Tower type 2D25 +1.5 m	each	1			
1.3.3	Tower type 2D25+3 m	each	2			
1.3.4	Tower type 2D25 +4.5 m	each	1			
1.3.5	Tower type 2D25 +6 m	each	2			
1.3.6	Tower type 2D25 +9 m	each	3			
1.3.7	Tower type 2D25 +12 m	each	3			
1.3.8	Tower type 2D25 +15 m	each	2			

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Unit	Quantity	Local Currency in BDT		Sales and Other Taxes
				Unit EXW Price ¹	EXW Total Price	Local Currency [BDT]
1	2	3	4	5	6=4*5	7
Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country						
1.4	Tower type "2DT6"					
1.4.1	Tower type 2DT6 Standard	each	1			
1.4.2	Tower type 2DT6+1.5 m	each	1			
1.4.3	Tower type 2DT6+3 m	each	2			
1.4.4	Tower type 2DT6+4.5 m	each	1			
1.4.5	Tower type 2DT6+6 m	each	2			
1.4.6	Tower type 2DT6+9 m	each	3			
1.4.7	Tower type 2DT6+12 m	each	2			
1.4.8	Tower type 2DT6+15 m	each	2			
1.5	Tower type "2D9"					
1.5.1	Tower type 2D9+6 m	each	1			
1.5.2	Tower type 2D9+9 m	each	1			
1.6	Pole					
1.6.1	Pole type 2DT6P	each	2			
1.7	Auxiliary Crossarm for pole type 2DT6P	per set of three	1			
1.8	Auxiliary crossarm for tower type 2DT6	per set of three	3			
1.9	Galvanized Tower Steel					
(a)	Fabricated	ton	10			
(b)	Non-fabricated	ton	10			
2	Phase conductor, earthwire and OPGW cable, complete with repair sleeves and joints					
2.1	Overland Portion					
2.2	"ACSR Mallard" Phase Conductor (3 Phase, Double Circuit, Single Conductor per phase on the line)	Route km ³	41			
2.3	7x4.00mm equivalent OPGW inclusive of joint boxes, fixing clamps, fusion splices and connections to the joint boxes. One OPGW earthwire on the line.	Route km ³	41			
2.4	7x4.00mm earthwire. One earthwire on the line.	Route km ³	41			

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Unit	Quantity	Local Currency in BDT		Sales and Other Taxes
				Unit EXW Price ¹	EXW Total Price	Local Currency [BDT]
1	2	3	4	5	6=4*5	7
Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country						
3	Insulator strings, with associated suspension and tension clamps for twin ACSR Mallard Conductor					
3.1	a) Single suspension string, 120 kN -disc only	Set	528			
	b) Single suspension string, 120 kN -fittings only	Set	528			
3.2	a) Single suspension string (Heavy Suspension), 210 kN -disc only	Set	192			
	a) Single suspension string (Heavy Suspension), 210 kN -fittings only	Set	192			
3.3	a) Single tension string, 210kN -disc only	Set	372			
	b) Single tension string, 210kN -fittings only	Set	372			
3.4	a) Single jumper suspension I-string, having each string 1x120 kN-disc only	Set	48			
	b) Single jumper suspension I-string, having each string 1x120 kN-fittings only	Set	48			
3.5	a) Single tension string, upright low duty 120kN- disc only	Set	12			
	b) Single tension string, upright low duty 120kN- fittings only	Set	12			
3.6	a) Single tension string, inverted low duty 120kN -discs only	Set	12			
	b) Single tension string, inverted low duty 120kN -fittings only	Set	12			
3.7	Counterweights for 210kN suspension insulator sets complete with yoke plate attachment bolts to be used for 2D1 towers:					
(a)	- 40kg set	each	3			
(b)	- 80kg set	each	3			
(c)	- 120kg set	each	5			
	Earthwire sets, complete with all accessories					
3.8	Suspension set	set	88			
3.9	Tension set	set	62			
	OPGW sets, complete with all accessories, incl. armour rods and earth bounds					
3.10	Suspension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)	set	88			

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Unit	Quantity	Local Currency in BDT		Sales and Other Taxes
				Unit EXW Price ¹	EXW Total Price	Local Currency [BDT]
1	2	3	4	5	6=4*5	7
Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country						
3.11	Tension set (including all fittings and accessories for surplus and to guide the OPGW to the joint box)	set	62			
	Dampers					
3.12	Vibration damper for phase conductor	per span	116			
3.13	Spacer damper for phase conductor	per span	116			
3.14	Vibration damper for earthwire	per span	116			
3.15	Vibration damper for OPGW	per span	116			
3.16	Spacer for jumper	nos.	93			
4	Aerial Markers					
4.1	Painting of tower having height more than 60 meter in accordance with the requirements of the Technical Specification	per tower	5			
4.2	Painting of tower (Reflecting Paint) upto 3 meter in submerge area in accordance with the requirements of the Technical Specification	per tower	5			
4.3	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, tower work platform etc.	each	12			
4.4	Aircraft warning spheres	each	12			
4.5	Bird diverters	each	15			
4.6	Bird guards, one bird guard per each crossarm applied on intermediate towers	each	528			
5	Mandatory Spare Parts and Tools					
5.1	Insulator and Fittings					
	Insulator sets complete with insulators and all hardware fittings including suspension clamps, tension dead ends, armour rods, arcing horn, Arcing ring etc					
5.1.1	120kN single suspension Insulators set for "twin ACSR Mallard" - Complete Assembly	set	5			
5.1.2	120kN jumper suspension set for "twin ACSR Mallard" - Complete Assembly	set	10			
5.1.3	210kN single tension set for "twin ACSR Mallard" - Complete Assembly	set	20			
5.2	Phase conductor, earthwire, OPGW & Fittings					
5.2.1	Phase conductor "ACSR Mallard " conductor	km	7			
5.2.2	Midspan Joint for "ACSR Mallard " conductor	each	5			
5.2.3	Repair sleeve for "ACSR Mallard " conductor	each	5			
5.2.4	Spacer Damper for "ACSR Mallard "	each	7			

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Unit	Quantity	Local Currency in BDT		Sales and Other Taxes
				Unit EXW Price ¹	EXW Total Price	Local Currency [BDT]
1	2	3	4	5	6=4*5	7
Schedule No. 2A Plant and Mandatory Spare Parts Supplied from Within the Employer's Country						
5.2.5	Jumper Spacer for "ACSR Mallard "	each	7			
5.2.6	Earthwire 7x4.00mm	km	7			
5.2.7	Midspan Joint for 7x4.00mm earthwire	each	3			
5.2.8	Suspension set for 7x4.00mm earthwire	each	10			
5.2.9	Tension set for 7x4.00mm earthwire	each	10			
5.2.10	Vibration damper for 7x4.00mm earthwire	each	15			
5.2.11	7x4.00mm Equivalent OPGW	km	10			
5.2.12	Suspension set for 7x4.00mm Equivalent OPGW	each	12			
5.2.13	Tension set for 7x4.00mm Equivalent OPGW	each	12			
5.2.14	Vibration damper for 7x4.00mm Equivalent OPGW	each	15			
5.3	Temporary earthing equipment	each	1			
5.4	Elcometer	each	1			
5.5	Motorised jointing compressor for conductor complete with dies suitable for conductors & earthwires to be used for this Contract	each	2			
Total Columns 6 to be carried forward to Schedule No. 5 - Grand Summary						

Name of Bidder

Signature of Bidder

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.

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)							
A3. Nutan Bidyut Power Plant-Char Fasson 230kV Double Circuit Line							
Item	Description	Unit	Quantity	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 3A Design Services							
1	Line Design						
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				
2	Tower/Pole Test						
2.1	Proto assembly of all type towers and mentioned Pole type with all extensions to prove compliance with specification. Payment for successful test only.						
2.1.1	2DL	Lot	1				
2.1.2	2D1	Lot	1				
2.1.3	2D25	Lot	1				
2.1.4	2DT6	Lot	1				
2.1.5	2D9	Lot	1				
2.1.6	2DT6P	Lot	1				
3	Foundation Design						
3.1	Foundation design for all soil types including additional soil investigation and additional soil resistivity measurement	Lump sum	1				
4	Test and Inspection						
4.1	Costs and Expenses related to test witness ³ (Provisional Sum)- (For both scope-A & B)	Lump sum	1		\$140,000.00		\$140,000.00
Total Columns 7 & 8 to be carried forward to Schedule No. 5 - Grand Summary							
5	Total Tax and VAT deductible at source(TDS & VDS) under the schedule 3(to be quoted in the currency similar as above) ²						
						Name of Bidder _____ Signature of Bidder _____	

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

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

A4. Nutan Bidyut Power Plant-Char Fasson 230kV Double Circuit Line							
Item	Description	Unit	Quantity	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services							
1	Survey and soil investigation works						
1.1	Survey Work						
1.1.1	Check survey in accordance with the requirements of the technical specification, incl. Full ground survey with change of route, if any, tower plotting and preparation and submission of route maps, profile drawings, SIMM documents, etc.	Route km	41				
1.2	Geotechnical Investigations incl. taking samples, logging and lab testing						
1.2.1	Boreholes for geotechnical investigation, incl. laboratory test, borehole logs, sampling and interpretive report as per geotechnical specification						
(a)	Level 2	borehole	2				
(b)	Level 4	borehole	4				
1.2.2	Soil resistivity tests (one per tower)	unit	121				
2	Foundations for towers/Poles including all setting out, Concrete, Reinforcement, Excavation, Pumping, Stub-Setting, Geotechnical Investigation (Level 2), Shuttering, Leveling, Timbering, supply & Installation of foundation steelwork, Earthing Materials, Backfilling, approved Protective Coating & site clearing etc.						
2.1	Tower type "2DL"						
2.1.1	Pile Foundation for Soil Category-2	per tower	10				
2.1.2	Pile Foundation for Soil Category-3	per tower	18				
2.1.3	Pile Foundation for Soil Category-4	per tower	15				
2.1.4	Piled Foundation with 1.0m raised chimney for any Soil Category	per tower	14				
2.1.5	Piled Foundation with 2.0m raised chimney for any Soil Category	per tower	12				
2.2	Tower type "2D1"						
2.2.1	Pile Foundation for Soil Category-2	per tower	1				
2.2.2	Pile Foundation for Soil Category-3	per tower	5				
2.2.3	Pile Foundation for Soil Category-4	per tower	3				
2.2.4	Piled Foundation with 1.0m raised chimney for any Soil Category	per tower	4				
2.2.5	Piled Foundation with 2.0m raised chimney for any Soil Category	per tower	4				
2.3	Tower type "2D25"						
2.3.1	Pile Foundation for Soil Category-2	per tower	2				
2.3.2	Pile Foundation for Soil Category-3	per tower	4				
2.3.3	Pile Foundation for Soil Category-4	per tower	3				
2.3.4	Piled Foundation with 1.0m raised chimney for any Soil Category	per tower	3				
2.3.5	Piled Foundation with 2.0m raised chimney for any Soil Category	per tower	3				

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Unit	Quantity	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services							
2.4	Tower type "2DT6"						
2.4.1	Pile Foundation for Soil Category-2	per tower	3				
2.4.2	Pile Foundation for Soil Category-3	per tower	4				
2.4.3	Pile Foundation for Soil Category-4	per tower	2				
2.4.4	Piled Foundation with 1.0m raised chimney for any Soil Category	per tower	2				
2.4.5	Piled Foundation with 2.0m raised chimney for any Soil Category	per tower	2				
2.5	Tower type "2D9"						
2.5.1	Pile Foundation for Soil Category-2	per tower	1				
2.5.2	Pile Foundation for Soil Category-3	per tower	1				
2.5.3	Pile Foundation for Soil Category-4	per tower	1				
2.5.4	Piled Foundation with 1.0m raised chimney for any Soil Category	per tower	1				
2.5.5	Piled Foundation with 2.0m raised chimney for any Soil Category	per tower	1				
2.6	Pole Foundation						
2.6.1	Pile Foundation for any Soil Category-Pole type 2DT6P	per tower	2				
2.7	River Crossing Foundation						
2.7.1	Tower type 2DT6+9m	per tower	1				
2.7.2	Tower type 2D1+18m	per tower	1				
2.7.3	Pole type 2DT6P with raised chimney	per tower	1				
3	Erection of 230kV double circuit Towers/Poles complete with all stubs, nuts, bolts, locking nuts, washers, phase conductor and earthwire swivels/shackles, step bolts, tower notice and identification plates, ACDs, protective coating, earthing etc.						
3.1	Tower type "2DL"						
3.1.1	Tower type 2DL Standard	each	5				
3.1.2	Tower type 2DL+1.5 m	each	5				
3.1.3	Tower type 2DL+3 m	each	5				
3.1.4	Tower type 2DL+4.5 m	each	5				
3.1.5	Tower type 2DL+6 m	each	13				
3.1.6	Tower type 2DL+9 m	each	15				
3.1.7	Tower type 2DL+12 m	each	13				
3.1.8	Tower type 2DL+15 m	each	10				
3.2	Tower type "2D1"						
3.2.1	Tower type 2D1 Standard	each	1				
3.2.2	Tower type 2D1 +1.5 m	each	1				
3.2.3	Tower type 2D1 +3 m	each	1				
3.2.4	Tower type 2D1 +4.5 m	each	1				
3.2.5	Tower type 2D1 +6 m	each	1				

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Unit	Quantity	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services							
3.2.6	Tower type 2D1 +9 m	each	2				
3.2.7	Tower type 2D1 +12 m	each	2				
3.2.8	Tower type 2D1 +15 m	each	3				
3.2.9	Tower type 2D1 +18 m	each	3				
3.2.10	Tower type 2D1 +21 m	each	2				
3.3	Tower type "2D25"						
3.3.1	Tower type 2D25 Standard	each	1				
3.3.2	Tower type 2D25 +1.5 m	each	1				
3.3.3	Tower type 2D25+3 m	each	2				
3.3.4	Tower type 2D25 +4.5 m	each	1				
3.3.5	Tower type 2D25 +6 m	each	2				
3.3.6	Tower type 2D25 +9 m	each	3				
3.3.7	Tower type 2D25 +12 m	each	3				
3.3.8	Tower type 2D25 +15 m	each	2				
3.4	Tower type "2DT6"						
3.4.1	Tower type 2DT6 Standard	each	1				
3.4.2	Tower type 2DT6+1.5 m	each	1				
3.4.3	Tower type 2DT6+3 m	each	2				
3.4.4	Tower type 2DT6+4.5 m	each	1				
3.4.5	Tower type 2DT6+6 m	each	2				
3.4.6	Tower type 2DT6+9 m	each	3				
3.4.7	Tower type 2DT6+12 m	each	2				
3.4.8	Tower type 2DT6+15 m	each	2				
3.5	Tower type "2D9"						
3.5.1	Tower type 2D9+6 m	each	1				
3.5.2	Tower type 2D9+9 m	each	1				
3.6	Pole Erection						
3.6.1	Pole type 2DT6P	per tower	2				
3.7	Cross-arm Erection	per set of three	1				
3.8	Galvanized steel works	per ton	10				
A4.	Testing of Foundations						
	Overland Portion						
4.1	Individual Pile test including supply,install and test to prove compliance with technical specification, payment for successful test only (applicable for all tower types selected by the Employer's Engineer):						
(a)	Compression test	per test	3				
(b)	Uplift test	per test	3				
(c)	Pile Integrity test	per test	117				

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Unit	Quantity	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services							
5	Stringing of double/four circuit line, two conductors per phase, 1 OPGW and 1 conventional earthwire (length approx. Route km)						
5.1	Overland Portion						
5.1.1	Conductor "ACSR Mallard" Phase Conductor (3 Phase, Double Circuit, Single Conductor 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	41				
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. One OPGW earthwire on the line.	route km	41				
5.1.3	One 7x4.00mm earthwire including Compressed dead-ends, compression junction sleeves suspension clamps, armour rods and dampers,Sagging and clipping, Earthing jumpers, warning sphere(if required)	route km	41				
6	Documentation						
6.1	Establishment of as-built drawings, manuals and all requested documents as per specifications	lump sum	1				
7	Miscellaneous						
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	lump sum	1				
7.5	Erection of earthwire connection from terminal tower to substation gantry	per wire	2				
7.6	Erection of OPGW connection from terminal tower to substation Gantry/Mast	per wire	2				
7.7	Additional counterpoise earthing in accordance with requirement of the Technical specification	per meter	50				
7.8	Miscellaneous Rates for works certified by the Engineer in accordance with method of Payment						
(a)	Additional Excavation	cu.m	200				
(b)	Additional Concrete	cu.m	200				
(c)	Additional Reinforcement	kg	1200				
(d)	Extra for surface resisting cement per cu.m of concrete	cu.m	100				
(e)	Additional Boring (500mm diameter)	rm	100				
(f)	Additional Boring (600mm diameter)	rm	100				
(g)	Additional Boring (750mm diameter)	rm	100				
(h)	Sand Filling	cu.m	225				

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV 132kV Transmission Lines on Turnkey Basis (Package-7).

Item	Description	Unit	Quantity	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
Schedule No. 4A Installation and Other Services							
7.9	Environmental and Social Services	lump sum	1				
7.10	STI, STD and HIV/AIDS alleviation program ²	lump sum	1				
7.11	Payment for Compensation (For resettlement of affected people, dwelling/commercial structures, trees, crops etc. on the Right of Way) and Payment of compensation using private land to construct transmission line towers (based on area of tower footprint)	lump sum	1	42,956,000.00		42,956,000.00	
Total Columns 7 & 8 to be carried forward to Schedule No. 5 - Grand Summary							
8	Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above) ³						

Name of Bidder _____
Signature of Bidder _____

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 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.

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document for the procurement of**

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B1: Reconductoring of Existing Ishurdi-Dhamrai-Ghorasal (1st East West Interconnector) 230 kV Double Circuit Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
1	Supply of phase conductor						
1.1	ACCC conductor equivalent to ACSR Mallard, as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line		route-km	161.5			
1.2	ACCC conductor equivalent to Smooth body ACSR special conductor (27.91mm), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line		route-km	13.5			
1.3	ACSR Mallard conductor as per specification (for purpose of terminating the transmission line with substation equipments)		km	1			
2	Supply of Hardware fittings (without insulators) - Suspension type						
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor (High Capacity ACCC); for below type and kN rating :						
2.1	Fittings set for 230kV 120kN single suspension(SS) insulator set for the ACCC conductor, set comprising the integral parts subjected to system voltage (without insulators)		set	60			
2.2	Fittings set for 230kV 120kN heavy suspension insulator set (if required) for the ACCC conductor, set comprising the integral parts subjected to system voltage (without insulators)		set	10			
2.3	Fittings set for 230kV 210kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Mallard, set comprising the integral parts subjected to system voltage (without insulators)		set	10			
2.4	Fittings set for 230kV 120kN jumper suspension (single suspension,SS) insulator set (if required) for the ACCC conductor, set comprising the integral parts subjected to system voltage(without insulators)		set	6			
3	Supply of Hardware fittings (without insulators) - Tension type						
	230kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for the ACCC conductor ; the tension fittings set to be designed with arcing horn; for below type and kN rating :						
3.1	230kV 120kN single tension (ST) fittings set, complete set (without insulators) for the ACCC		set	10			
3.2	230kV 210kN single tension (ST) fittings set, complete set (without insulators) for the ACCC		set	6			
3.3	230kV 120kN single upright low duty Tension fittings set, complete set (without insulators) for the ACCC conductor		set	3			
3.4	230kV 120kN single inverted low duty Tension fittings set, complete set (without insulators) for the ACCC conductor		set	3			
4	Vibration Damper for the ACCC conductor		per span	459			
5	Aircraft warning spheres for River crossing OPGW/Earthwire		each	100			
6	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, etc.		each	13			
7	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required		per tonne	5			
	Sub-total Price to be carried forward						
	Sub-total brought forward						
8	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 230kV bus in the 230kV substation						
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 230kV substations from substation gantry up to each 230kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS, CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Mallard per phase and new connecting fittings/accessories suitable for twin ACSR Mallard ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Mallard at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Mallard per phase) to be of such design & material that the temperature of the ACSR Mallard will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Mallard) flowing through the circuit (supply of phase conductor ACSR Mallard is not						
8.1	Ishurdi 230/132kV substation - all fittings as mentioned above		lot	1			
8.2	Ghorashal 230/132kV substation - all fittings as mentioned above		lot	1			

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document for the procurement of**

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B1: Reconductoring of Existing Ishurdi-Dhamrai-Ghorasal (1st East West Interconnector) 230 kV Double Circuit Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
S	Spares						
S1	Phase conductor						
S1.1	Phase conductor ACCC-Mallard (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.		km	6			
S1.2	Phase conductor ACCC equivalent to Smooth body ACSR special conductor (27.91mm)(same conductor as mentioned in item B1.2) with 2 nos. core retainers per drum.		km	1			
S2	Insulators						
S2.1	120 kN insulator unit		each	2000			
S2.2	210 kN insulator unit		each	450			
S3	Fittings & Accessories						
S3.1	Mid-span compression joint for the ACCC conductor (phase conductor)		set	50			
S3.2	Repair sleeve for the ACCC conductor (phase conductor)		set	10			
S3.3	Vibration damper for the ACCC conductor (phase conductor)		each	10			
S3.4	230kV 120kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for the ACCC conductor		set	6			
S3.5	230kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for the ACCC conductor		set	6			
S3.6	Compression type I clamp for jumper		pcs	5			
S3.7	ACCC Conductor pulling shocks		pcs	5			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 8.1 & B 8.2] -						
	(i) Ishurdi 230/132kV substation		lot	1			
	(ii) Ghorashal 230/132kV substation		lot	1			
E	Erection & Test Equipment						
E1	Motorized Compressor Jointing Equipment for ACCC and variable size		each	1			
TOTAL Column 7 to be carried forward to Schedule No.5: Grand Summary							

Name of Bidder.....

Signature of Bidder.....

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

²Specify currency in accordance with ITB 19.1 of the Bid Data Sheet and create additional columns as required accordingly.

Country of Origin Declaration Form

Item	Description	Code	Country

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B1: Reconductoring of Existing Ishurdi-Dhamrai-Ghorasal (1st East West Interconnector) 230 kV Double Circuit Line

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

Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹	Sales and Other Taxes
				EXW Local Currency (BDT)	EXW Local Currency (BDT)	Local Currency (BDT)
1	2	3	4	5	6	7
1	Supply of phase conductor					
1.1	ACCC conductor equivalent to ACSR Mallard, as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line	route-km	161.5			
1.2	ACCC conductor equivalent to Smooth body ACSR special conductor (27.91mm), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line	route-km	13.5			
1.2	ACSR Mallard conductor as per specification (for purpose of terminating the transmission line with substation equipments)	km	1			
2	Supply of Hardware fittings (without insulators) - Suspension type					
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor (High Capacity ACCC) for below type and kN rating :					
2.1	Fittings set for 230kV 120kN single suspension(SS) insulator set for the ACCC conductor, set comprising the integral parts subjected to system voltage (without insulators)	set	60			
2.2	Fittings set for 230kV 120kN heavy suspension insulator set (if required) for the ACCC conductor, set comprising the integral parts subjected to system voltage (without insulators)	set	10			
2.3	Fittings set for 230kV 210kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Mallard, set comprising the integral parts subjected to system voltage (without insulators)	set	10			
2.4	Fittings set for 230kV 120kN jumper suspension (single suspension,SS) insulator set (if required) for the ACCC conductor, set comprising the integral parts subjected to system voltage(without insulators)	set	6			
3	Supply of Hardware fittings (without insulators) - Tension type					
0	230kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for the ACCC conductor ; the tension fittings set to be designed with arcing horn; for below type and kN rating :					
3.1	230kV 120kN single tension (ST) fittings set, complete set (without insulators) for the ACCC conductor	set	10			
3.2	230kV 210kN single tension (ST) fittings set, complete set (without insulators) for the ACCC conductor	set	6			
3.3	230kV 120kN single upright low duty Tension fittings set, complete set (without insulators) for the ACCC conductor	set	3			
3.4	230kV 120kN single inverted low duty Tension fittings set, complete set (without insulators) for the ACCC conductor	set	3			
4	Vibration Damper for the ACCC conductor	each	459			
5	Aircraft warning spheres for River crossing OPGW/Earthwire	each	100			
6	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, etc.	each	13			
7	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required	per tonne	5			
	Sub-total Price to be carried forward					
	Sub-total brought forward					
8	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 230kV bus in the 230kV substation					

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B1: Reconductoring of Existing Ishurdi-Dhamrai-Ghorasal (1st East West Interconnector) 230 kV Double Circuit Line

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency (BDT)	Local Currency (BDT)	Local Currency (BDT)
1	2	3	4	5	6	7
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 230kV substations from substation gantry up to each 230kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Mallard per phase and new connecting fittings/accessories suitable for twin ACSR Mallard ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Mallard at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Mallard per phase) to be of such design & material that the temperature of the ACSR Mallard will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Mallard) flowing through the circuit (supply of phase conductor ACSR Mallard is not included in this item)					
8.1	Ishurdi 230/132kV substation - all fittings as mentioned above	lot	1			
8.2	Ghorashal 230/132kV substation - all fittings as mentioned above	lot	1			
S	Spares					
S1	Phase conductor					
S1.1	Phase conductor ACCC-Mallard (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.	km	6			
S1.2	Phase conductor ACCC equivalent to Smooth body ACSR special conductor (27.91mm)(same conductor as mentioned in item B1.2) with 2 nos. core retainers per drum.	km	1.00			
S2	Insulators					
S2.1	120 kN insulator unit	each	2000			
S2.2	210 kN insulator unit	each	450			
S3	Fittings & Accessories					
S3.1	Mid-span compression joint for the ACCC conductor (phase conductor)	set	50			
S3.2	Repair sleeve for the ACCC conductor (phase conductor)	set	10			
S3.3	Vibration damper for the ACCC conductor (phase conductor)	each	10			
S3.4	230kV 120kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for the ACCC conductor	set	6			
S3.5	230kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for the ACCC conductor	set	6			
S3.6	Compression type I clamp for jumper	pcs	5			
S3.7	ACCC Conductor pulling shocks	pcs	5			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 8.1 & B 8.2] -					
	(i) Ishurdi 230/132kV substation	lot	1			
	(ii) Ghorashal 230/132kV substation	lot	1			
E	Erection & Test Equipment					
E1	Motorized Compressor Jointing Equipment for ACCC and variable size	each	1			
TOTAL Column 6 to be carried forward to Schedule No.5: Grand Summary						

Name of Bidder.....

Signature of Bidder.....

¹Specify currency in accordance with ITB 19.1 of the Bid Data Sheet. The Price of column 5 and 6 (and consequently column 7 and 8) shall not include VAT on EXW Price. VAT on EXW Price shall not be included in the Contract Price.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B1: Reconductoring of Existing Ishurdi-Dhamrai-Ghorasal (1st East West Interconnector) 230 kV Double Circuit Line

Schedule No. 3: Design Services

				Design Cost	
Item	Description	Unit	Qty	Foreign Currency	Local Currency (BDT)
-	All Design Cost (including termination of the transmission line) shall be deemed to be included in respective Schedule Nos. 1 (and/or 2, as applicable) and 4.	-	-	Not applicable	Not applicable
	Total			-	-

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B1: Reconductoring of Existing Ishurdi-Dhamrai-Ghorasal (1st East West Interconnector) 230 kV Double Circuit Line

Schedule No.4- Installation and Other Services

Item	Description	Unit	Qty	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7=4x5	8=4x6
B1	Route Survey & Clearance						
B1.1	Profile survey in accordance with the requirements of technical specification, incl. full ground survey, preparation and submission of route maps, mouza maps, profile drawings, SIMM documents etc.	route-km	175				
B1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	route-km	175				
B2	Stringing						
B2.1	Installation of insulator strings complete with all necessary hardware, installing & stringing of conductor including fixing of conductor accessories, necessary midspan joints and repair sleeves using phase conductor the ACCC conductor; 6 nos. single conductor on the double circuit line under single circuit live line condition for double circuit line, re-stringing of the earthwire/OPGW in any sections (if required) also to be included in this item;	route-km	175				
B3	Installation of Aircraft Warning spheres on River crossing OPGW/earthwire (river crossing with Tower height above 60M) as per requirement	each	100				
B4	Installation of Air craft obstruction lights (solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework,etc.) on the river crossing towers with height above 60M, as per requirement, including any modification work required on the tower for installation of Air craft obstruction lights	per tower	15				
B5	Painting of tower having height above 60M in accordance with the requirements of the Technical Specification including supply of paint.	per tower	13				
B6	Dismantling and Storing						
B6.1	Dismantling of existing phase conductor ACSR [six (6) nos. single conductors on the line] and fittings etc, drumming/packing of dismantled materials as per instruction of engineer in-charge	route-km	175				
B6.2	Storing of the dismantled materials at respective GMD store of PGCB as per instruction of engineer in-charge	route-km	175				
B7	Works for termination of the transmission line to the substation equipments in the 230kV substation						
B7.1	Erection of single downleads including dropdown from terminal tower to sub-station gantry	set of three	4				
B7.2	All works required for completing the termination of the transmission line at Ishurdi 230/230kV substation [two (2) circuits/bays for 230kV double circuit Ishurdi-Ghorashal Transmission line] - from substation gantry to each 230kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Mallard per phase and suitable new connecting fittings/accessories from the gantry up to each 230kV bus; they have to do all other works as required for completion of the termination	lot	1				
B7.3	All works required for completing the termination of the transmission line at Ghorashal 230/230kV substation[two (2) circuits/bays for 230kV double circuit Ghorashal-Joydebpur Transmission line] - from substation gantry to each 230kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Mallard per phase and suitable new connecting fittings/accessories from the gantry up to each 230kV bus; they have to do all other works as required for completion of the termination	lot	1				
B8	Miscellaneous						
B8.1	Strengthening/ Repair of existing tower, as/if required	per tonne	5				
TOTAL Column 7&8 to be carried forward to Schedule No.5: Grand Summary							
	Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above) ²						

Name of Bidder..... Signature of Bidder.....

¹ Specify currencies in accordance with IIB 19.1 of the BUS. 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.

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document for the procurement of**

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B2: Reconductoring of Ishurdi-Natore 132kV Double Circuit Transmission Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
B1	Supply of phase conductor						
B1.1	ACCC conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line		route-km	45			
B1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)		km	1			
B2	Supply of Hardware fittings (without insulators) - Suspension type						
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :						
B2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)		set	1			
B3	Supply of Hardware fittings (without insulators) - Tension type						
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :						
B3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.3	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.4	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak		per span	124			
B5	Aircraft warning spheres for River crossing OPGW/Earthwire		each	1			
B6	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, etc.		each	1			
B7	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/ff required		per tonne	5			
	Sub-total Price to be carried forward						
	Sub-total brought forward						
B8	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation						
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR Grosbeak) is maintained.						

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document for the procurement of**

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B2: Reconductoring of Ishurdi-Natore 132kV Double Circuit Transmission Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
B8.1	Ishurdi 132/33kV substation - all fittings as mentioned above		lot	1			
B8.2	Natore 132/33kV substation - all fittings as mentioned above		lot	1			
S	Spare						
S1	Phase conductor						
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.		km	1			
S2	Insulators						
S2.1	70 kN insulator unit		each	240			
S2.2	120 kN insulator unit		each	264			
S3	Fittings & Accessories						
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak		set	10			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak		set	5			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak		each	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak		set	3			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak		set	3			
S3.6	Compression type I clamp for jumper		pcs	5			
S3.7	ACCC Conductor pulling shocks		pcs	5			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 8.1 & B 8.2] -						
	(i) Ishurdi 132/33kV substation		lot	1			
	(ii) Natore 132/33kV substation		lot	1			
E	Erection & Test Equipment						
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size		each	1			
	TOTAL Column 7 to be carried forward to Schedule No.5: Grand Summary						

Name of Bidder.....

Signature of Bidder.....

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

²Specify currency in accordance with ITB 19.1 of the Bid Data Sheet and create additional columns as required accordingly.

Country of Origin Declaration Form

Item	Description	Code	Country

POWER GRID COMPANY OF BANGLADESH LIMITED

**Bidding Document for the procurement of
Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission
Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)**

Scope B2: Reconductoring of Ishurdi-Natore 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price	Total Price	Sales and Other
				EXW Local Currency (BDT)	EXW Local Currency (BDT)	Taxes Local Currency [BDT]
1	2	3	4	5	6	7
1	Supply of phase conductor					
1.1	ACCC conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line	route-km	45			
1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)	km	1			
2	Supply of Hardware fittings (without insulators) - Suspension type					
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :					
2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)	set	1			
3	Supply of Hardware fittings (without insulators) - Tension type					
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :					
3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak	each	124			
5	Aircraft warning spheres for River crossing OPGW/Earthwire	each	5			
6	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, etc.	each	5			
7	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required	per tonne	5			
	Sub-total Price to be carried forward					
	Sub-total brought forward					

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of
Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission
Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B2: Reconductoring of Ishurdi-Natore 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price	Total Price	Sales and Other
				EXW Local Currency (BDT)	EXW Local Currency (BDT)	Taxes Local Currency [BDT]
1	2	3	4	5	6	7
8	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation					
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR					
8.1	Ishurdi 132/33kV substation - all fittings as mentioned above	lot	1			
8.2	Natore 132/33kV substation - all fittings as mentioned above	lot	1			
S	Spares					
S1	Phase conductor					
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.	km	1			
S2	Insulators					
S2.1	70 kN insulator unit	each	240			
S2.2	120 kN insulator unit	each	264			
S3	Fittings & Accessories					
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	10			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	5			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak	per span	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.6	Compression type I clamp for jumper	pcs	5			
S3.7	ACCC Conductor pulling shocks	pcs	5			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 8.1 & B 8.2] -					
	(i) Ishurdi 132/33kV substation	lot	1			
	(ii) Natore 132/33kV substation	lot	1			
E	Erection & Test Equipment					
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size	each	1			
TOTAL Column 6 to be carried forward to Schedule No.5: Grand Summary						

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B2: Reconductoring of Ishurdi-Natore 132kV Double Circuit Transmission Line

Schedule No. 3: Design Services

				Design Cost	
Item	Description	Unit	Qty	Foreign Currency	Local Currency (BDT)
-	All Design Cost (including termination of the transmission line) shall be deemed to be included in respective Schedule Nos. 1 (and/or 2, as applicable) and 4.	-	-	Not applicable	Not applicable
	Total			-	-

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B2: Reconductoring of Ishurdi-Natore 132kV Double Circuit Transmission Line

Schedule No.4- Installation and Other Services

Item	Description	Unit	Qty	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7=4x5	8=4x6
B1	Route Survey & Clearance						
B1.1	Profile survey in accordance with the requirements of technical specification, incl. full ground survey, preparation and submission of route maps, mouza maps, profile drawings, SIMM documents etc.	route-km	45				
B1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	route-km	45				
B2	Stringing						
B2.1	Installation of insulator strings complete with all necessary hardware, installing & stringing of conductor including fixing of conductor accessories, necessary midspan joints and repair sleeves using phase conductor ACCC-Grosbeak; 6 nos. single conductor on the double circuit line under single circuit live line condition for double circuit line, re-stringing of the earthwire/OPGW in any sections (if required) also to be included in this item;	route-km	45				
B3	Installation of Aircraft Warning spheres on River crossing OPGW/earthwire (river crossing with Tower height above 60M) as per requirement	each	1				
B4	Installation of Air craft obstruction lights (solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework,etc.) on the river crossing towers with height above 60M, as per requirement, including any modification work required on the tower for installation of Air craft obstruction lights	per tower	1				
B5	Painting of tower having height above 60M in accordance with the requirements of the Technical Specification including supply of paint.	per tower	1				
B6	Dismantling and Storing						
B6.1	Dismantling of existing phase conductor AAAC [six (6) nos. single conductors on the line] and fittings etc, drumming/packing of dismantled materials as per instruction of engineer in-charge	route-km	45				
B6.2	Storing of the dismantled materials at respective GMD store of PGCB as per instruction of engineer in-charge	route-km	45				
B7	Works for termination of the transmission line to the substation equipments in the 132kV substation						
B7.1	Erection of single downleads including dropdown from terminal tower to sub-station gantry	set of three	4				
B7.2	All works required for completing the termination of the transmission line at Ishurdi 132/33kV substation [two (2) circuits/bays for 132kV double circuit Ishurdi-Natore Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B7.3	All works required for completing the termination of the transmission line at Natore 132/33kV substation [two (2) circuits/bays for 132kV double circuit Ishurdi-Natore Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B8	Miscellaneous						
B8.1	Strengthening/ Repair of existing tower, as/if required	per tonne	2				
TOTAL Column 7&8 to be carried forward to Schedule No.5: Grand Summary							
Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above) ²							

Name of Bidder..... Signature of Bidder.....

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.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B3: Reconductoring of Ishurdi-Bheramara 132kV Double Circuit Transmission Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
B1	Supply of phase conductor						
B1.1	ACCC conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line		route-km	10			
B1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)		km	1			
B2	Supply of Hardware fittings (without insulators) - Suspension type						
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :						
B2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B3	Supply of Hardware fittings (without insulators) - Tension type						
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :						
B3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.3	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.4	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak		per span	43			
B5	Aircraft warning spheres for River crossing OPGW/Earthwire		each	1			
B6	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, etc.		each	1			
B7	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required		per tonne	2			
	Sub-total Price to be carried forward						
	Sub-total brought forward						

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B3: Reconductoring of Ishurdi-Bheramara 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹	Sales and Other Taxes
				EXW Local Currency (BDT)	EXW Local Currency (BDT)	Local Currency [BDT]
1	2	3	4	5	6	7
1	Supply of phase conductor					
1.1	ACCC conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line	route-km	10			
1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)	km	1			
2	Supply of Hardware fittings (without insulators) - Suspension type					
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :					
2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)	set	1			
3	Supply of Hardware fittings (without insulators) - Tension type					
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :					
3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak	each	43			
5	Aircraft warning spheres for River crossing OPGW/Earthwire	each	1			
6	Air craft obstruction lights solar powered complete with lamps, solar, panels, batteries, control equipment cables, support framework, etc.	each	1			
7	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required	per tonne	2			
	Sub-total Price to be carried forward					
	Sub-total brought forward					

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document for the procurement of**

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B3: Reconductoring of Ishurdi-Bheramara 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹	Sales and Other Taxes
				EXW Local Currency (BDT)	EXW Local Currency (BDT)	Local Currency [BDT]
1	2	3	4	5	6	7
8	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation					
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR Grosbeak is not included in this item).					
8.1	Ishurdi 132/33kV substation - all fittings as mentioned above	lot	1			
8.2	Bheramara 132/33kV substation - all fittings as mentioned above	lot	1			
S	Spares		0			
S1	Phase conductor					
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.	km	1			
S2	Insulators					
S2.1	70 kN insulator unit	each	120			
S2.2	120 kN insulator unit	each	132			
S3	Fittings & Accessories					
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	10			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	5			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak	per span	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.6	Compression type I clamp for jumper	pcs	5			
S3.7	ACCC Conductor pulling shocks	pcs	5			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 8.1 & B 8.2] -					
	(i) Ishurdi 132/33kV substation	lot	1			
	(ii) Bheramara 132/33kV substation	lot	1			
E	Erection & Test Equipment					
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size	each	1			
TOTAL Column 7 to be carried forward to Schedule No.5: Grand Summary						

Name of Bidder.....

Signature of Bidder.....

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

²Specify currency in accordance with ITB 19.1 of the Bid Data Sheet and create additional columns as required accordingly.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B3: Reconductoring of Ishurdi-Bheramara 132kV Double Circuit Transmission Line

Schedule No. 3: Design Services

				Design Cost	
Item	Description	Unit	Qty	Foreign Currency	Local Currency (BDT)
-	All Design Cost (including termination of the transmission line) shall be deemed to be included in respective Schedule Nos. 1 (and/or 2, as applicable) and 4.	-	-	Not applicable	Not applicable
	Total			-	-

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B3: Reconductoring of Ishurdi-Bheramara 132kV Double Circuit Transmission Line

Schedule No.4- Installation and Other Services

Item	Description	Unit	Qty	Unit Price1		Total Price1	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7=4x5	8=4x6
B1	Route Survey & Clearance						
B1.1	Profile survey in accordance with the requirements of technical specification, incl. full ground survey, preparation and submission of route maps, mouza maps, profile drawings, SIMM documents etc.	route-km	10				
B1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	route-km	10				
B2	Stringing						
B2.1	Installation of insulator strings complete with all necessary hardware, installing & stringing of conductor including fixing of conductor accessories, necessary midspan joints and repair sleeves using phase conductor ACCC-Grosbeak; 6 nos. single conductor on the double circuit line under single circuit live line condition for double circuit line, re-stringing of the earthwire/OPGW in any sections (if required) also to be included in this item;	route-km	10				
B3	Dismantling and Storing						
B3.1	Dismantling of existing phase conductor AAAC [six (6) nos. single conductors on the line] and fittings etc, drumming/packing of dismantled materials as per instruction of engineer in-charge	route-km	10				
B3.2	Storing of the dismantled materials at respective GMD store of PGCB as per instruction of engineer in-charge	route-km	10				
B4	Works for termination of the transmission line to the substation equipments in the 132kV substation						
B4.1	Erection of single downleads including dropdown from terminal tower to sub-station gantry	set of three	4				
B4.2	All works required for completing the termination of the transmission line at Ishurdi 132/33kV substation [two (2) circuits/bays for 132kV double circuit Ishurdi-Bheramara Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B4.3	All works required for completing the termination of the transmission line at Bheramara 132/33kV substation [two (2) circuits/bays for 132kV double circuit Ishurdi-Bheramara Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B5	Miscellaneous						
B5.1	Strengthening/ Repair of existing tower, as/if required	per tonne	5				
TOTAL Column 6 to be carried forward to Schedule No.5: Grand Summary							
Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above)*							

Name of Bidder..... Signature of Bidder.....

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.

POWER GRID COMPANY OF BANGLADESH LIMITED

**Bidding Document for the procurement of
Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on
Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)**

Scope B4: Reconductoring of Mohastangorh-Palashbari 132kV Double Circuit Transmission Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
B1	Supply of phase conductor						
B1.1	ACCC-Grosbeak conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line		route-km	36			
B1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)		km	1			
B2	Supply of Hardware fittings (without insulators) - Suspension type						
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :						
B2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)		set	1			
B3	Supply of Hardware fittings (without insulators) - Tension type						
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :						
B3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak		per span	102			
B5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required		per tonne	5			
	Sub-total Price to be carried forward						
	Sub-total brought forward						

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

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

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

²Specify currency in accordance with ITB 19.1 of the Bid Data Sheet and create additional columns as required accordingly.

Country of Origin Declaration Form

Item	Description	Code	Country

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B4: Reconductoring of Mohastangorh-Palashbari 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency (BDT)	Local Currency (BDT)	Local Currency (BDT)
1	2	3	4	5	6	7
1	Supply of phase conductor					
1.1	ACCC-Grosbeak conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line	route-km	36			
1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)	km	1			
2	Supply of Hardware fittings (without insulators) - Suspension type					
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :					
2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)	set	1			
3	Supply of Hardware fittings (without insulators) - Tension type					
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :					
3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak	each	102			
5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required	per tonne	5			
	Sub-total Price to be carried forward					
	Sub-total brought forward					

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B4: Reconductoring of Mohastangorh-Palashbari 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency (BDT)	Local Currency (BDT)	Local Currency (BDT)
1	2	3	4	5	6	7
6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation					
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR Grosbeak is not included in this					
6.1	Mohastangorh 132/33kV substation - all fittings as mentioned above	lot	1			
6.2	Palashbari 132/33kV substation - all fittings as mentioned above	lot	1			
S	Spares					
S1	Phase conductor					
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.	km	4			
S2	Insulators					
S2.1	70 kN insulator unit	each	220			
S2.2	120 kN insulator unit	each	240			
S3	Fittings & Accessories					
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	15			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	10			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak	each	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.6	Compression type I clamp for jumper	pcs	5			
S3.7	ACCC Conductor pulling shocks	pcs	5			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 6.1 & B 6.2] -					
	(ii) Mohastangorh 132/33kV substation	lot	1			
	(ii) Palashbari 132/33kV substation	lot	1			
E	Erection & Test Equipment					
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size	each	1			
	TOTAL Column 7 and 8 to be carried forward to Schedule No.5: Grand Summary					

Name of Bidder.....

Signature of Bidder.....

¹Specify currency in accordance with ITB 19.1 of the Bid Data Sheet. The Price of column 5 and 6 (and consequently column 7 and 8) shall not include VAT on EXW Price. VAT on EXW Price shall not be included in the Contract Price.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Ghar Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B4: Reconductoring of Mohastangorh-Palashbari 132kV Double Circuit Transmission Line

Schedule No. 3: Design Services

Item	Description	Unit	Qty	Design Cost	
				Foreign Currency	Local Currency (BDT)
-	All Design Cost (including termination of the transmission line) shall be deemed to be included in respective Schedule Nos. 1 (and/or 2, as applicable) and 4.	-	-	Not applicable	Not applicable
	Total			-	-

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B4: Reconductoring of Mohastangorh-Palashbari 132kV Double Circuit Transmission Line

Schedule No.4- Installation and Other Services

Item	Description	Unit	Qty	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7=4x5	8=4x6
B1	Route Survey & Clearance						
B1.1	Profile survey in accordance with the requirements of technical specification, incl. full ground survey, preparation and submission of route maps, mouza maps, profile drawings, SIMM documents etc.	route-km	36				
B1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	route-km	36				
B2	Stringing						
B2.1	Installation of insulator strings complete with all necessary hardware, installing & stringing of conductor including fixing of conductor accessories, necessary midspan joints and repair sleeves using phase conductor ACCC-Grosbeak; 6 nos. single conductor on the double circuit line under single circuit live line condition for double circuit line, re-stringing of the earthwire/OPGW in any sections (if required) also to be included in this item;	route-km	36				
B3	Dismantling and Storing						
B3.1	Dismantling of existing phase conductor AAAC [six (6) nos. single conductors on the line] and fittings etc, drumming/packing of dismantled materials as per instruction of engineer in-charge	route-km	36				
B3.2	Storing of the dismantled materials at respective GMD store of PGCB as per instruction of engineer in-charge	route-km	36				
B4	Works for termination of the transmission line to the substation equipments in the 132kV substation						
B4.1	Erection of single downleads including dropdown from terminal tower to sub-station gantry	set of three	4				
B4.2	All works required for completing the termination of the transmission line at Mohastangorh 132/33kV substation [two (2) circuits/bays for 132kV double circuit Palashbari-Mohastangorh Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B7.3	All works required for completing the termination of the transmission line at Palashbari 400/230/132kV substation [two (2) circuits/bays for 132kV double circuit Mohastangorh-Palashbari Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B8	Miscellaneous						
B8.1	Strengthening/ Repair of existing tower, as/if required	per tonne	5				
TOTAL Column 7&8 to be carried forward to Schedule No.5: Grand Summary							
Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above) ²							

Name of Bidder..... Signature of Bidder.....

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.

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document for the procurement of**

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B5: Reconductoring of Purbashadipur-Thakurgaon 132kV Double Circuit Transmission Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
B1	Supply of phase conductor						
B1.1	ACCC-Grosbeak conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line		route-km	47			
B1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)		km	1			
B2	Supply of Hardware fittings (without insulators) - Suspension type						
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :						
B2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)		set	1			
B3	Supply of Hardware fittings (without insulators) - Tension type						
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :						
B3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak		per span	131			
B5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required		per tonne	5			
	Sub-total Price to be carried forward						
	Sub-total brought forward						

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document for the procurement of**

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B5: Reconductoring of Purbashadipur-Thakurgaon 132kV Double Circuit Transmission Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
B6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation						
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR Grosbeak is not included in this item)						
B6.1	Purbashadipur 132/33kV substation - all fittings as mentioned above		lot	1			
B6.2	Thakurgaon 132/33kV substation - all fittings as mentioned above		lot	1			
S	Spares						
S1	Phase conductor						
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.		km	4			
S2	Insulators						
S2.1	70 kN insulator unit		each	240			
S2.2	120 kN insulator unit		each	280			
S3	Fittings & Accessories						
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak		set	15			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak		set	10			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak		each	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak		set	3			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak		set	3			
S3.6	Compression type I clamp for jumper		pcs	5			
S3.7	ACCC Conductor pulling shocks		pcs	5			
S3.9	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 6.1 & B 6.2] -						
S3.10	(ii) Purbashadipur 132/33kV substation		lot	1			
	(ii) Thakurgaon 132/33kV substation		lot	1			
E	Erection & Test Equipment						
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size		each	1			
TOTAL Column 7 to be carried forward to Schedule No.5: Grand Summary							
					Name of Bidder.....		
					Signature of Bidder.....		

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

²Specify currency in accordance with ITB 19.1 of the Bid Data Sheet and create additional columns as required accordingly.

Country of Origin Declaration Form

Item	Description	Code	Country

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B5: Reconductoring of Purbashadipur-Thakurgaon 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency	Local Currency	Local Currency [BDT]
1	2	3	4	5	6	7
1	Supply of phase conductor					
1.1	ACCC-Grosbeak conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line	route-km	47			
1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)	km	1			
2	Supply of Hardware fittings (without insulators) - Suspension type					
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :					
2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)	set	1			
3	Supply of Hardware fittings (without insulators) - Tension type					
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :					
3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak	each	131			
5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required	per tonne	5			
	Sub-total Price to be carried forward					
	Sub-total brought forward					

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B5: Reconductoring of Purbashadipur-Thakurgaon 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency	Local Currency	Local Currency [BDT]
1	2	3	4	5	6	7
6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation					
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR Grosbeak is not included in this					
6.1	Purbashadipur 132/33kV substation - all fittings as mentioned above	lot	1			
6.2	Thakurgaon 132/33kV substation - all fittings as mentioned above	lot	1			
S	Spares					
S1	Phase conductor					
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.	km	4			
S2	Insulators					
S2.1	70 kN insulator unit	each	240			
S2.2	120 kN insulator unit	each	280			
S3	Fittings & Accessories					
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	15			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	10			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak	each	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR	set	3			
S3.6	Compression type I clamp for jumper	pcs	5			
S3.7	ACCC Conductor pulling shocks	pcs	5			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 6.1 & B 6.2] -					
	(ii) Purbashadipur 132/33kV substation	lot	1			
	(ii) Thakurgaon 132/33kV substation	lot	1			
E	Erection & Test Equipment					
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size	each	1			
	TOTAL Column 7 and 8 to be carried forward to Schedule No.5: Grand Summary					

Name of Bidder.....

Signature of Bidder.....

¹Specify currency in accordance with ITB 19.1 of the Bid Data Sheet. The Price of column 5 and 6 (and consequently column 7 and 8) shall not include VAT on EXW Price. VAT on EXW Price shall not be included in the Contract Price.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B5: Reconductoring of Purbashadipur-Thakurgaon 132kV Double Circuit Transmission Line

Schedule No. 3: Design Services

				Design Cost	
Item	Description	Unit	Qty	Foreign Currency	Local Currency (BDT)
-	All Design Cost (including termination of the transmission line) shall be deemed to be included in respective Schedule Nos. 1 (and/or 2, as applicable) and 4.	-	-	Not applicable	Not applicable
	Total			-	-

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B5: Reconductoring of Purbashadipur-Thakurgaon 132kV Double Circuit Transmission Line

Schedule No.4- Installation and Other Services

Item	Description	Unit	Qty	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7=4x5	8=4x6
B1	Route Survey & Clearance						
B1.1	Profile survey in accordance with the requirements of technical specification, incl. full ground survey, preparation and submission of route maps, mouza maps, profile drawings, SIMM documents etc.	route-km	47				
B1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	route-km	47				
B2	Stringing						
B2.1	Installation of insulator strings complete with all necessary hardware, installing & stringing of conductor including fixing of conductor accessories, necessary midspan joints and repair sleeves using phase conductor ACCC-Grosbeak; 6 nos. single conductor on the double circuit line under single circuit live line condition for double circuit line, re-stringing of the earthwire/OPGW in any sections (if required) also to be included in this item;	route-km	47				
B3	Dismantling and Storing						
B3.1	Dismantling of existing phase conductor ACSR-Grosbeak [six (6) nos. single conductors on the line] and fittings etc, drumming/packing of dismantled materials as per instruction of engineer in-charge	route-km	47				
B3.2	Storing of the dismantled materials at respective GMD store of PGCB as per instruction of engineer in-charge	route-km	47				
B4	Works for termination of the transmission line to the substation equipments in the 132kV substation						
B4.1	Erection of single downleads including dropdown from terminal tower to sub-station gantry	set of three	4				
B4.2	All works required for completing the termination of the transmission line at Purbashadipur 132/33kV substation [two (2) circuits/bays for 132kV double circuit Thakurgaon-Purbashadipur Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B7.3	All works required for completing the termination of the transmission line at Thakurgaon 132/33kV substation [two (2) circuits/bays for 132kV double circuit Purbashadipur-Thakurgaon Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B8	Miscellaneous						
B8.1	Strengthening/ Repair of existing tower, as/if required	per tonne	5				
TOTAL Column 7&8 to be carried forward to Schedule No.5: Grand Summary							
Total Tax and VAT deductible at source (TDS & VDS) under the schedule 4B (to be quoted in the currency similar as above) ²							

Name of Bidder..... Signature of Bidder.....

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.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B6: Reconductoring of Confidence 113 MW Power Plant to Rangpur 132kV Double Circuit Transmission Line

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
B1	Supply of phase conductor						
B1.1	ACCC-Grosbeak conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line		route-km	10.4			
B1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)		km	1			
B2	Supply of Hardware fittings (without insulators) - Suspension type						
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :						
B2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)		set	1			
B3	Supply of Hardware fittings (without insulators) - Tension type						
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :						
B3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak		per span	34			
B5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required		per tonne	5			
	Sub-total Price to be carried forward						
	Sub-total brought forward						

B6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation						
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR						
B6.1	Confidence 132/33kV substation - all fittings as mentioned above		lot	1			
B6.2	Rangpur 132/33kV substation - all fittings as mentioned above		lot	1			
S	Spares						
S1	Phase conductor						
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.		km	4			
S2	Insulators						
S2.1	70 kN insulator unit		each	150			
S2.2	120 kN insulator unit		each	165			
S3	Fittings & Accessories						
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak		set	15			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak		set	10			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak		each	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak		set	3			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak		set	3			
S3.6	Compression type I clamp for jumper		pcs	5			
S3.7	ACCC Conductor pulling shocks		pcs	5			
S3.9	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 6.1 & B 6.2] -						
S3.10	(ii) Confidence 132/33kV substation		lot	1			
	(ii) Rangpur 132/33kV substation		lot	1			
E	Erection & Test Equipment						
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size		each	1			
	TOTAL Column 7 to be carried forward to Schedule No.5: Grand Summary						

Name of Bidder.....

Signature of Bidder.....

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

²Specify currency in accordance with ITB 19.1 of the Bid Data Sheet and create additional columns as required accordingly.

Country of Origin Declaration Form

Item	Description	Code	Country

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B6: Reconductoring of Confidence 113 MW Power Plant to Rangpur 132kV Double Circuit Transmission Line

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency (BDT)	Local Currency (BDT)	Local Currency (BDT)
1	2	3	4	5	6	7
1	Supply of phase conductor					
1.1	ACCC-Grosbeak conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line	route-km	10.4			
1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)	km	1			
2	Supply of Hardware fittings (without insulators) - Suspension type					
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :					
2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)	set	1			
3	Supply of Hardware fittings (without insulators) - Tension type					
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :					
3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak	each	131			
5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required	per tonne	5			
	Sub-total Price to be carried forward					
	Sub-total brought forward					
6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation					
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR Grosbeak is not included in this item)					
6.1	Confidence 132/33kV substation - all fittings as mentioned above	lot	1			
6.2	Rangpur 132/33kV substation - all fittings as mentioned above	lot	1			

S	Spares					
S1	Phase conductor					
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.	km	4			
S2	Insulators					
S2.1	70 kN insulator unit	each	240			
S2.2	120 kN insulator unit	each	280			
S3	Fittings & Accessories					
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	15			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	10			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak	each	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	3			
S3.6	Compression type I clamp for jumper	pcs	5			
S3.7	ACCC Conductor pulling shocks	pcs	5			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 6.1 & B 6.2] -					
	(ii) Confidence 132/33kV substation	lot	1			
	(ii) Rangpur 132/33kV substation	lot	1			
E	Erection & Test Equipment					
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size	each	1			
	TOTAL Column 6 to be carried forward to Schedule No.5: Grand Summary					

Name of Bidder.....

Signature of Bidder.....

¹Specify currency in accordance with ITB 19.1 of the Bid Data Sheet. The Price of column 5 and 6 (and consequently column 7 and 8) shall not include VAT on EXW Price. VAT on EXW Price shall not be included in the Contract Price.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B6:Reconductoring of Confidence 113 MW Power Plant to Rangpur 132kV Double Circuit Transmission Line

Schedule No. 3: Design Services

				Design Cost	
Item	Description	Unit	Qty	Foreign Currency	Local Currency (BDT)
-	All Design Cost (including termination of the transmission line) shall be deemed to be included in respective Schedule Nos. 1 (and/or 2, as applicable) and 4.	-	-	Not applicable	Not applicable
	Total			-	-

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B6: Reconductoring of Confidence 113 MW Power Plant to Rangpur 132kV Double Circuit Transmission Line

Schedule No.4- Installation and Other Services

Item	Description	Unit	Qty	Unit Price1		Total Price1	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7=4x5	8=4x6
B1	Route Survey & Clearance						
B1.1	Profile survey in accordance with the requirements of technical specification, incl. full ground survey, preparation and submission of route maps, mouza maps, profile drawings, SIMM documents etc.	route-km	10.4				
B1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	route-km	10.4				
B2	Stringing						
B2.1	Installation of insulator strings complete with all necessary hardware, installing & stringing of conductor including fixing of conductor accessories, necessary midspan joints and repair sleeves using phase conductor ACCC-Grosbeak; 6 nos. single conductor on the double circuit line under single circuit live line condition for double circuit line, re-stringing of the earthwire/OPGW in any sections (if required) also to be included in this item;	route-km	10.4				
B3	Dismantling and Storing						
B3.1	Dismantling of existing phase conductor AAAC [six (6) nos. single conductors on the line] and fittings etc, drumming/packing of dismantled materials as per instruction of engineer in-charge	route-km	10.4				
B3.2	Storing of the dismantled materials at respective GMD store of PGCB as per instruction of engineer in-charge	route-km	10.4				
B4	Works for termination of the transmission line to the substation equipments in the 132kV substation						
B4.1	Erection of single downleads including dropdown from terminal tower to sub-station gantry	set of three	4				

B4.2	All works required for completing the termination of the transmission line at Confidence 132/33kV substation [two (2) circuits/bays for 132kV double circuit Rangpur-Confidence Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B7.3	All works required for completing the termination of the transmission line at Rangpur 132/33kV substation [two (2) circuits/bays for 132kV double circuit Confidence-Rangpur Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B8	Miscellaneous						
B8.1	Strengthening/ Repair of existing tower, as/if required	per tonne	5				
TOTAL Column 7 & 8 to be carried forward to Schedule No.5: Grand Summary							
Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above) ²							

Name of Bidder..... Signature of Bidder.....

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.

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document
for the procurement of****Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis
(Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)****Scope B7-1: Reconductoring of Ishurdi-Ghorashal 230kV Double Circuit LILO Transmission line at Dhamrai Substation****Schedule No.1 - Plant and Mandatory Spare Parts Supplied from Abroad**

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in...)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
A1	Supply of phase conductor						
A1.1	ACCC-Mallard conductor (ACCC conductor with equal diameter of ACSR Mallard), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line (total route length from LILO cutting point to Substaion shall be considered).		route-km	1			
A1.2	ACSR Mallard conductor as per specification (for purpose of terminating the transmission line with substation equipments)		km	0.5			
A2	Supply of Hardware fittings (without insulators) - Suspension type						
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Mallard ; for below type and kN rating :						
A2.1	Fittings set for 230kV 120kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Mallard, set comprising the integral parts subjected to system voltage (without insulators)		set				
A2.2	Fittings set for kV 210kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Mallard, set comprising the integral parts subjected to system voltage (without insulators)		set				
A2.3	Fittings set for 230kV 120kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Mallard, set comprising the integral parts subjected to system voltage(without insulators)		set				
A3	Supply of Hardware fittings (without insulators) - Tension type						
	230kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Mallard ; the tension fittings set to be designed with arcing horn; for below type and kN rating :						
A3.1	230kV 210kN double tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Mallard		set				
A3.2	230kV 120kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Mallard		set				
A3.3	230kV 120kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Mallard		set				
A4	Vibration Damper for ACCC conductor with equal diameter of ACSR Mallard		per span	3			
A5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required		per tonne	5			
	Sub-total Price to be carried forward						
	Sub-total brought forward						

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document
for the procurement of****Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis
(Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)****Scope B7-1: Reconductoring of Ishurdi-Ghorashal 230kV Double Circuit LILO Transmission line at Dhamrai Substation****Schedule No.1 - Plant and Mandatory Spare Parts Supplied from Abroad**

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in...)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
A6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 230kV bus in the 230kV substation						
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 230kV substations from substation gantry up to each 230kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Mallard per phase and new connecting fittings/accessories suitable for twin ACSR Mallard ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Mallard at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Mallard per phase) to be of such design & material that the temperature of the ACSR Mallard will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Mallard) flowing through the circuit (supply of phase conductor ACSR Mallard is not						
A6.1	Dhamrai 230/132kV substation - all fittings as mentioned above		lot	1			
S	Spares						
S1	Phase conductor						
S1.1	Phase conductor ACCC Mallard (same conductor as mentioned in item A1.1) with 2 Nos. core retainers per drum.		km	1			
S2	Insulators						
S2.1	120 kN insulator unit		each	200			
S2.2	210 kN insulator unit		each	400			
S3	Fittings & Accessories						
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Mallard		set	2			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Mallard		set	2			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Mallard		each	5			
S3.4	230kV 120kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Mallard		set	6			
S3.5	230kV 210kN double tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Mallard		set	6			
S3.6	Compression type I clamp for jumper		pcs	1			
S3.7	ACCC Conductor pulling shocks		pcs	1			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. A 6.1 & A 6.2] -						
	(i) Dhamrai 132/33kV substation		lot	1			
E	Erection & Test Equipment						
E1	Motorized Compressor Jointing Equipment for ACCC Mallard and variable size		each	1			
	TOTAL Column 7 to be carried forward to Schedule No.5: Grand Summary						

Name of Bidder.....

Signature of Bidder.....

¹Bidder shall enter a code representing the country of origin of all imported plant and equipment.²Specify currency in accordance with ITB 19.1 of the Bid Data Sheet and create additional columns as required accordingly.

Country of Origin Declaration Form

Item	Description	Code	Country

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document**

for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B7-2: Reconductoring of Ishurdi-Ghorashal 230kV Double Circuit LILO Transmission line at Dhamrai Substation

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency (BDT)	Local Currency (BDT)	Local Currency (BDT)
1	2	3	4	6	8	7
A1	Supply of phase conductor					
A1.1	ACCC-Mallard conductor (ACCC conductor with equal diameter of ACSR Mallard), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line (total route length from LILO cutting point to Substation shall be considered).	route-km	1			
A1.2	ACSR Mallard conductor as per specification (for purpose of terminating the transmission line with substation equipments)	km	0.5			
A2	Supply of Hardware fittings (without insulators) - Suspension type					
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Mallard ; for below type and kN rating :					
A2.1	Fittings set for 230kV 120kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Mallard, set comprising the integral parts subjected to system voltage (without insulators)	set				
	Fittings set for kV 210kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Mallard, set comprising the integral parts subjected to system voltage (without insulators)	set				
A2.2	Fittings set for 230kV 120kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Mallard, set comprising the integral parts subjected to system voltage(without insulators)	set				
A3	Supply of Hardware fittings (without insulators) - Tension type					
	230kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Mallard ; the tension fittings set to be designed with arcing horn; for below type and kN rating :					
A3.1	230kV 210kN double tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Mallard	set				
	230kV 120kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Mallard	set				
A3.2	230kV 120kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Mallard	set				
A4	Vibration Damper for ACCC conductor with equal diameter of ACSR Mallard	per span	3			
A5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required	per tonne	5			
	Sub-total Price to be carried forward					
	Sub-total brought forward					

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document**

for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B7-2: Reconductoring of Ishurdi-Ghorashal 230kV Double Circuit LILO Transmission line at Dhamrai Substation

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency (BDT)	Local Currency (BDT)	Local Currency (BDT)
1	2	3	4	6	8	7
A6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 230kV bus in the 230kV substation					
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 230kV substations from substation gantry up to each 230kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Mallard per phase and new connecting fittings/accessories suitable for twin ACSR Mallard ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Mallard at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Mallard per phase) to be of such design & material that the temperature of the ACSR Mallard will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Mallard) flowing through the circuit (supply of					
A6.1	Dhamrai 230/132kV substation - all fittings as mentioned above	lot	1			
S	Spares					
S1	Phase conductor					
S1.1	Phase conductor ACCC Mallard (same conductor as mentioned in item A1.1) with 2 Nos. core retainers per drum.	km	1			
S2	Insulators					
S2.1	120 kN insulator unit	each	200			
S2.2	210 kN insulator unit	each	400			
S3	Fittings & Accessories		0			
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Mallard	set	2			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Mallard	set	2			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Mallard	each	5			
S3.4	230kV 120kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Mallard	set	6			
S3.5	230kV 210kN double tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Mallard	set	6			
S3.6	Compression type I clamp for jumper	pcs	1			
S3.7	ACCC Conductor pulling shocks	pcs	1			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. A 6.1 & A 6.2] -					
	(i) Dhamrai 132/33kV substation	lot	1			
E	Erection & Test Equipment					
E1	Motorized Compressor Jointing Equipment for ACCC Mallard and variable size	each				
	TOTAL Column 7 and 8 to be carried forward to Schedule No.5: Grand Summary					

Name of Bidder.....

Signature of Bidder.....

¹Specify currency in accordance with ITB 19.1 of the Bid Data Sheet. The Price of column 5 and 6 (and consequently column 7 and 8) shall not include VAT on EXW Price. VAT on EXW Price shall not be included in the Contract Price.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

**Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and
Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No.
PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)**

Scope B7-3: Reconductoring of Ishurdi-Ghorashal 230kV Double Circuit LILO Transmission line at Dhamrai Substation

Schedule No. 3: Design Services

				Design Cost	
Item	Description	Unit	Qty	Foreign Currency	Local Currency (BDT)
-	All Design Cost (including termination of the transmission line) shall be deemed to be included in respective Schedule Nos. 1 (and/or 2, as applicable) and 4.	-	-	Not applicable	Not applicable
	Total			-	-

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED**Bidding Document
for the procurement of**

**Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7).
(Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)**

Scope B7-4: Reconductoring of Ishurdi-Ghorashal 230kV Double Circuit LILO Transmission line at Dhamrai Substation

Schedule No.4- Installation and Other Services

Item	Description	Unit	Qty	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7=4x5	8=4x6
A1	Route Survey & Clearance						
A1.1	Profile survey in accordance with the requirements of technical specification, incl. full ground survey, preparation and submission of route maps, mouza maps, profile drawings, SIMM documents etc.	route-km	1				
A1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	route-km	1				
A2	Stringing						
A2.1	Installation of insulator strings complete with all necessary hardware, installing & stringing of conductor including fixing of conductor accessories, necessary midspan joints and repair sleeves using phase conductor ACCC-Mallard ; 6 nos. single conductor on the double circuit line and under single circuit live line condition for double circuit line , re-stringing of the earthwire/OPGW in any sections (if required) also to be included in this item;	route-km	1				
A3	Dismantling and Storing						
A3.1	Dismantling of existing phase conductor ACSR Grosbeak [six (6) nos. single conductors on the line] and fittings etc, drumming/packing of dismantled materials as per instruction of engineer in-charge	route-km	1				
A3.2	Storing of the dismantled materials at respective GMD store of PGCB as per instruction of engineer in-charge	route-km	1				
A4	Works for termination of the transmission line to the substation equipments in the 230kV substation						
A4.1	Erection of single downleads including dropdown from terminal tower to sub-station gantry	set of three	1				
A4.2	All works required for completing the termination of the transmission line at Dhamrai 230/132kV substation [four (4) circuits/bays for 230kV double circuit Ishwardi-Ghorashal Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 4nos. bays/circuits with new conductor twin ACSR Mallard per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
A5	Miscellaneous						
A5.1	Strengthening/ Repair of existing tower, as/if required	per tonne	5				
TOTAL Column 7 & 8 to be carried forward to Schedule No.5: Grand Summary							
Total Tax and VAT deductible at source (TDS & VDS) under the schedule 4B (to be quoted in the currency similar as above) ²							

Name of Bidder..... Signature of Bidder.....

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.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B8-1: Reconductoring of Ishurdi-Natore 132kV Double Circuit LILO Transmission line at Bonpara Substation

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

Item	Description	Code ¹	Unit	Qty	Foreign Currency (in....)		Taxes and Duties
					Unit Price ² CIP	Total Price ² CIP	Local Currency [BDT]
1	2	3	4	5	6	7	8
B1	Supply of phase conductor						
B1.1	ACCC-Grosbeak conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line (total route length from LILO cutting point to Substation shall be considered)		route-km	1			
B1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)		km	0.5			
B2	Supply of Hardware fittings (without insulators) - Suspension type						
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :						
B2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)		set	1			
B2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)		set	1			
B3	Supply of Hardware fittings (without insulators) - Tension type						
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :						
B3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak		set	1			
B4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak		per span	3			
B5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/If required		per tonne	2			
	Sub-total Price to be carried forward						
	Sub-total brought forward						
B6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation						
	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR						
B6.1	Bonpara 132/33kV substation - all fittings as mentioned above		lot	1			

S	Spares						
S1	Phase conductor						
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.		km	1			
S2	Insulators						
S2.1	70 kN insulator unit		each	100			
S2.2	120 kN insulator unit		each	150			
S3	Fittings & Accessories						
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak		set	5			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak		set	5			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak		each	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak		set	2			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak		set	2			
S3.6	Compression type I clamp for jumper		pcs	1			
S3.7	ACCC Conductor pulling shocks		pcs	1			
S3.9	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 6.1 & B 6.2] -						
S3.10	Bonpara 132/33kV substation		lot	1			
E	Erection & Test Equipment						
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size		each	1			
	TOTAL Column 7 to be carried forward to Schedule No.5: Grand Summary						

Name of Bidder.....

Signature of Bidder.....

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

²Specify currency in accordance with ITB 19.1 of the Bid Data Sheet and create additional columns as required accordingly.

Country of Origin Declaration Form

Item	Description	Code	Country

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B8-2: Reconductoring of Ishurdi-Natore 132kV Double Circuit LILO Transmission line at Bonpara Substation

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

Item	Description	Unit	Qty	Unit Price ¹ EXW	Total Price ¹ EXW	Sales and Other Taxes
				Local Currency (BDT)	Local Currency (BDT)	Local Currency [BDT]
1	2	3	4	5	6	7
1	Supply of phase conductor					
1.1	ACCC-Grosbeak conductor (ACCC conductor with equal diameter of ACSR Grosbeak), as per specification, including necessary midspan joints and repair sleeves, extra length for sag & jumper etc ; six (6) nos. single conductors on the double circuit transmission line (total route length from LILO cutting point to Substaion shall be considered)	route-km	1			
1.2	ACSR Grosbeak conductor as per specification (for purpose of terminating the transmission line with substation equipments)	km	0.5			
2	Supply of Hardware fittings (without insulators) - Suspension type					
	Suspension type hardware fittings set as the integral parts of each complete Hardware fittings/insulator (suspension type) set (excluding insulators), being subjected to system voltage with phase conductor while in service; the integral parts include the fittings/components such as suspension clamp, socket eye/ ball link etc as applicable, subjected to system voltage, and exclude the fittings/ components not subjected to system voltage ; the hardware fittings shall be compatible with: (a) existing fittings/ components not to be replaced and (b) new phase conductor ACCC with equal diameter of ACSR Grosbeak ; for below type and kN rating :					
2.1	Fittings set for 132kV 70kN single suspension(SS) insulator set for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.2	Fittings set for 132kV 120kN heavy suspension insulator set (if required) for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage (without insulators)	set	1			
2.3	Fittings set for 132kV 70kN jumper suspension (single suspension,SS) insulator set (if required)for ACCC conductor with equal diameter of ACSR Grosbeak, set comprising the integral parts subjected to system voltage(without insulators)	set	1			
3	Supply of Hardware fittings (without insulators) - Tension type					
	132kV Tension fittings complete set (without insulators), each set comprising both the live parts fittings/components and non-live parts fittings/components, for phase conductor ACCC with equal diameter of ACSR Grosbeak ; the tension fittings set to be designed with arcing horn; for below type and kN rating :					
3.1	132kV 120kN single tension (ST) fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.2	132kV 70kN single upright low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
3.3	132kV 70kN single inverted low duty Tension fittings set, complete set (without insulators) for ACCC conductor with equal diameter of ACSR Grosbeak	set	1			
4	Vibration Damper for ACCC conductor with equal diameter of ACSR Grosbeak	each	3			
5	Fabricated and galvanized tower steel (Mild steel & High tensile) including nut-bolts, washers etc for strengthening/ repair of existing any tower(s), as/if required	per tonne	2			
	Sub-total Price to be carried forward					
	Sub-total brought forward					
6	Supply of Fittings/accessories related to the termination of the transmission line with each relevant substation equipment upto each 132kV bus in the 132kV substation					

	All fittings/accessories required for completing the termination of the transmission line in each of the mentioned below 132kV substations from substation gantry up to each 132kV Bus via each existing equipment in the relevant two (2) bays/circuits ; existing phase conductor (single conductor per phase) as jumper/loop/drop-in/drop-out conductor etc along with its connecting fittings/accessories (i.e. the fittings/accessories which connect the phase conductor with the bay equipments viz LA, CT/PT, ES, DS , CB, Busbar conductor etc) in the relevant 2 bays of each substation to be replaced with new phase conductor twin ACSR Grosbeak per phase and new connecting fittings/accessories suitable for twin ACSR Grosbeak ; all the fittings/accessories to be of such design & material that they can continuously conduct without raising the temperature above allowable limit of the substation equipments the current that is two times the maximum continuous operating current of ACSR Grosbeak at prevailing conditions; the connector (T-pad/ T-connector or any other kind fitting as appropriate) required nearby the gantry for making connectivity between the line phase conductor ACCC (terminated at the gantry) and the relevant bay phase conductor (twin ACSR Grosbeak per phase) to be of such design & material that the temperature of the ACSR Grosbeak will not exceed the limit as mentioned above while maximum continuous operating current (two times the maximum continuous current of ACSR Grosbeak) flowing through the circuit (supply of phase conductor ACSR Grosbeak is not included in this					
6.1	Bonpara 132/33kV substation - all fittings as mentioned above	lot	1			
S	Spares					
S1	Phase conductor					
S1.1	Phase conductor ACCC-Grosbeak (same conductor as mentioned in item B1.1) with 2 nos. core retainers per drum.	km	4			
S2	Insulators					
S2.1	70 kN insulator unit	each	240			
S2.2	120 kN insulator unit	each	280			
S3	Fittings & Accessories					
S3.1	Mid-span compression joint for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	5			
S3.2	Repair sleeve for phase conductor ACCC with equal diameter of ACSR Grosbeak	set	5			
S3.3	Vibration damper for phase conductor ACCC with equal diameter of ACSR Grosbeak	each	5			
S3.4	132kV 70kN single suspension(SS) complete fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	2			
S3.5	132kV 120kN single tension (ST) fittings set, each set comprising both the live parts/components and non-live parts/components (without insulator discs) for ACCC with equal diameter of ACSR Grosbeak	set	2			
S3.6	Compression type I clamp for jumper	pcs	1			
S3.7	ACCC Conductor pulling shocks	pcs	1			
S3.8	Supply of fittings for termination of Transmission Line [similar lot (item) as described in item No. B 6.1 & B 6.2] -					
	Bonpara 132/33kV substation	lot	1			
E	Erection & Test Equipment					
E1	Motorized Compressor Jointing Equipment for ACCC-Grosbeak and variable size	each	1			
	TOTAL Column 7 and 8 to be carried forward to Schedule No.5: Grand Summary					

Name of Bidder.....

Signature of Bidder.....

¹Specify currency in accordance with ITB 19.1 of the Bid Data Sheet. The Price of column 5 and 6 (and consequently column 7 and 8) shall not include VAT on EXW Price. VAT on EXW Price shall not be included in the Contract Price.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and
Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No.
PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B8-3: Reconductoring of Ishurdi-Natore 132kV Double Circuit LILO Transmission line at Bonpara Substation

Schedule No. 3: Design Services

				Design Cost	
Item	Description	Unit	Qty	Foreign Currency	Local Currency (BDT)
-	All Design Cost (including termination of the transmission line) shall be deemed to be included in respective Schedule Nos. 1 (and/or 2, as applicable) and 4.	-	-	Not applicable	Not applicable
	Total			-	-

Name of Bidder.....

Signature of Bidder.....

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the procurement of

Construction of Notun Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-BAN/SWTGEP/230kV&132kV/TL)

Scope B8-4: Reconductoring of Ishurdi-Natore 132kV Double Circuit LILO Transmission line at Bonpara Substation

Schedule No.4- Installation and Other Services

Item	Description	Unit	Qty	Unit Price ¹		Total Price ¹	
				Local Currency Portion [BDT]	Foreign Currency Portion [xxx]	Local Currency Portion [BDT]	Foreign Currency Portion [xxx]
1	2	3	4	5	6	7=4x5	8=4x6
B1	Route Survey & Clearance						
B1.1	Profile survey in accordance with the requirements of technical specification, incl. full ground survey, preparation and submission of route maps, mouza maps, profile drawings, SIMM documents etc	route-km	1				
B1.2	Route clearance in accordance with requirements of the technical specification including payment of compensation for crops, trees, houses, etc. and all kinds of damage compensation	route-km	1				
B2	Stringing						
B2.1	Installation of insulator strings complete with all necessary hardware, installing & stringing of conductor including fixing of conductor accessories, necessary midspan joints and repair sleeves using phase conductor ACCC- Grosbeak ; 6 nos. single conductor on the double circuit line under single circuit live line condition for double circuit line , re-stringing of the earthwire/OPGW in any sections (if required) also to be included in this item;	route-km	1				
B3	Dismantling and Storing						
B3.1	Dismantling of existing phase conductor ACCC [six (6) nos. single conductors on the line] and fittings etc, drumming/packing of dismantled materials as per instruction of engineer in-charge	route-km	1				
B3.2	Storing of the dismantled materials at respective GMD store of PGCB as per instruction of engineer in-charge	route-km	1				
B4	Works for termination of the transmission line to the substation equipments in the 132kV substation						
B4.1	Erection of single downleads including dropdown from terminal tower to sub-station gantry	set of three	1				

B4.2	All works required for completing the termination of the transmission line at Confidence 132/33kV substation [two(2) circuits/bays for 132kV double circuit Rangpur-Confidence Transmission line] - from substation gantry to each 132kV Bus via each existing equipment in the relevant 2 nos. bays/circuits ; the Contractor shall replace all the existing phase conductors (jumper/loop/drop-in conductors etc which connect all relevant equipments) and their connecting fittings/accessories in the relevant 2 nos. bays/circuits with new conductor twin ACSR Grosbeak per phase and suitable new connecting fittings/accessories from the gantry up to each 132kV bus; they have to do all other works as required for completion of the termination	lot	1				
B8	Miscellaneous						
B8.1	Strengthening/ Repair of existing tower, as/if required	per tonne	5				
TOTAL Column 7 & 8 to be carried forward to Schedule No.5: Grand Summary							
Total Tax and VAT deductible at source(TDS & VDS) under the schedule 4B(to be quoted in the currency similar as above) ²							

Name of Bidder..... Signature of Bidder

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.

POWER GRID COMPANY OF BANGLADESH LIMITED

Bidding Document for the Procurement of

Construction of Nutan Bidyut Power Plant-Char Fasson 230kV Transmission Line and Reconductoring of 230kV & 132kV Transmission Lines on Turnkey Basis (Package-7). (Contract No. PGCB/ADB/51137-RAN/SWT/GFP/230kV&132kV/TI)

Schedule No. 5 : Grand Summary

Item	Description	Total Price ¹	
		Foreign Currency (in)	Local Currency (Bangladesh Taka)
Scope A: Nutan Bidyut Power Plant-Char Fasson 230kV on Turnkey Basis 230kV Double Circuit Line			
1	Total Schedule No.1A - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2A - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3A - Design Service		
4	Total Schedule No.4A - Installation and Other Services		
Total Scope A			
Scope B1: Reconductoring of Existing Ishurdi-Dhamrai-Ghorasal (1st East West Interconnector) 230 kV Double Circuit Line			
1	Total Schedule No.1 - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2 - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3 - Design Service		
4	Total Schedule No.4 - Installation and Other Services		
Total Scope B1			
Scope B2: Reconductoring of Ishurdi-Natore 132kV Double Circuit Transmission Line			
1	Total Schedule No.1 - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2 - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3 - Design Service		
4	Total Schedule No.4 - Installation and Other Services		
Total Scope B2			
Scope B3: Reconductoring of Ishurdi-Bheramara 132kV Double Circuit Transmission Line			
1	Total Schedule No.1 - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2 - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3 - Design Service		
4	Total Schedule No.4 - Installation and Other Services		
Total Scope B3			
Scope B4: Reconductoring of Mohastangorh-Palashbari 132kV Double Circuit Transmission Line			
1	Total Schedule No.1 - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2 - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3 - Design Service		
4	Total Schedule No.4 - Installation and Other Services		
Total Scope B4			

Scope B5: Reconductoring of Purbashadipur-Thakurgaon 132kV Double Circuit Transmission Line			
1	Total Schedule No.1 - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2 - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3 - Design Service		
4	Total Schedule No.4 - Installation and Other Services		
Total Scope B5			
Scope B6: Reconductoring of Confidence 113 MW Power Plant to Rangpur 132kV Double Circuit Transmission Line			
1	Total Schedule No.1 - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2 - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3 - Design Service		
4	Total Schedule No.4 - Installation and Other Services		
Total Scope B6			
Scope B7: Reconductoring of Ishurdi-Ghorashal 230kV Double Circuit LILO Transmission line at Dhamrai Substation			
1	Total Schedule No.1 - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2 - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3 - Design Service		
4	Total Schedule No.4 - Installation and Other Services		
Total Scope B7			
Scope B8: Reconductoring of Ishurdi-Natore 132kV Double Circuit LILO Transmission line at Bonpara Substation			
1	Total Schedule No.1 - Plant, and Mandatory Spare Parts Supplied from Abroad		
2	Total Schedule No.2 - Plant, and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Schedule No.3 - Design Service		
4	Total Schedule No.4 - Installation and Other Services		
Total Scope B8			
Grand Total [Sum of Scope A & B]			

Name of Bidder.....

Signature of Bidder.....

The above Grand Total Price shall appear in the Letter of Price Bid.

¹ Specify foreign currency in accordance with ITB 19.1 of the Bid Data Sheet and create any additional columns as required accordingly.

Nutan Bidyut Power Plant-Char Fasson 230kV Transmission Line

Name of Bidder	
Signature of Bidder	