Invitation for Bids (IFB)

18 March 2019

Bangladesh Bank

Financial Sector Support Project

Procurement of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator & Substation Capacity Expansion for Information Systems

Credit Number: 56640

IFB Title: Procurement of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator & Substation Capacity Expansion for Information Systems

IFB Number: BB(G)IT-03 [NDC]

1. This Invitation for Bids (IFB) follows the General Procurement Notice (GPN) for this project that appeared in UNDB online on 09 July 2015.

2. The Peoples Republic of Bangladesh has received a credit from the International Development Association toward the cost of Financial Sector Support Project, and it intends to apply part of the proceeds of this credit to payments under the agreement(s) resulting from this IFB: Procurement of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator & Substation Capacity Expansion for Information Systems, IFB number: BB(G)IT-03[NDC].

3. The Bangladesh Bank serves as the implementing agency for the project and now invites sealed bids from eligible Bidders for Procurement of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator & Substation Capacity Expansion for Information Systems.

4. Bidding will be conducted using the National Competitive Bidding (NCB) procedures specified in the World Bank’s Guidelines: Procurement under IBRD Loans and IDA Credits, edition of Procurement of Goods, Works and non-consulting services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers dated January 2011 (revised July 2014), and is open to all Bidders eligible as defined in these Guidelines that meet the following minimum qualification criteria:

(a) The Bidder must have been in business for the last seven (07) years;

(b) The Bidder shall have satisfactorily completed at least 01(One) of similar nature work (supply and installation of minimum 500KVA, 11/0.415KV Substation with HT AVR, HT Panel, LT Panel, PFI Panel etc. and 200KVA generator) in any Government/Semi-Government/Autonomous Organization during last 07(Seven) years. The Tenderer shall have to furnish work completion certificate in this respect from officer not below the rank of Executive Engineer or equivalent;

(c) The Bidder must demonstrate present minimum average annual turnover of BDT 5,00,00,000.00 (Bangladesh Taka Five Crore) equivalent calculated as total certified payments received for contracts in progress or completed in any particular year within the last seven (07) years;

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(d) The Bidder must demonstrate minimum BDT 6,00,00,000.00 (Bangladesh Taka Six Crore) equivalent present liquid asset and/or line of credit, net of current commitments;

(e) The bidder must have at least three years proven experience in providing warranty support services.

5. Interested eligible Bidders may obtain further information from Bangladesh Bank and inspect the bidding documents at the address given below from 11:00AM to 5:00PM Bangladesh Standard Time (GMT+6:00) on all working days. The pre-bid meeting will be held at 03:00 PM on Sunday 31 March, 2019.

6. A complete set of bidding documents in English may be purchased by interested Bidders on submission of a written application to the address below and upon payment of a nonrefundable fee of BDT 10,000.00 (Bangladesh Taka Ten Thousand). The method of payment will be pay order or bank draft in favor of the Advertiser. No bidding documents would be sold on the day of Bid opening.

7. Bids must be delivered to Jahangir Alam Conference Hall, Fourth Floor, Main Building, Bangladesh Bank, Head Office, Motijheel C/A, Dhaka-1000 at or before 03:30PM Bangladesh Standard Time on Wednesday 24 April 2019. Bids need to be secured by a Bid Security. The amount of Bid Security required is BDT 22,00,000.00 (Bangladesh Taka Twenty Two Lac). Late bids will be rejected. Bids will be opened in the presence of Bidders’ representatives who choose to attend at Jahangir Alam Conference Hall at 03:40PM Bangladesh Standard Time on Wednesday 24 April 2019. Bidders should also submit softcopy of all bid documents in CD/DVD format.

8. The attention of prospective Bidders is drawn to (i) the fact that they will be required to certify in their bids that all software is either covered by a valid license or was produced by the Bidder and (ii) that violations are considered fraud, which can result in ineligibility to be awarded World Bank-financed contracts.

9. The attention of prospective Bidders is also drawn to the fact that at the time of receipt of the bidding documents, they carefully check that they have received all sections and attachments of the bidding documents. The Bidder may note that this IFB is a part of the Information Systems to be procured by the Purchaser.

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GOVERNMENT OF PEOPLE'S REPUBLIC OF BANGLADESH

Supply, Installation, Testing, Commissioning, Implementation and related services of Generator and Substation Capacity Expansion for Information Systems

Package No.: BB(G)IT-03[NDC]
Financial Sector Support Project

Single-Stage Bidding

Bangladesh Bank
Head Office, Motijheel, Dhaka

18 March, 2019
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Section I. Instructions to Bidders

A. General

1. Scope of Bid

1.1 In connection with the Invitation for Bids, specified in the Bid Data Sheet (BDS), the Purchaser, as specified in the BDS, issues these Bidding Documents for the supply of Goods and Related Services incidental thereto as specified in Section VI, Schedule of Requirements. The name, identification and number of lots (contracts) of this National Competitive Bidding (NCB) procurement are specified in the BDS.

1.2 Throughout these Bidding Documents:
(a) the term “in writing” means communicated in written form (e.g. by mail, e-mail, fax, telex) with proof of receipt;
(b) if the context so requires, “singular” means “plural” and vice versa; and
(c) “day” means calendar day.

2. Source of Funds

2.1 The Borrower or Recipient (hereinafter called “Borrower”) specified in the BDS has applied for or received financing (hereinafter called “funds”) from the International Bank for Reconstruction and Development or the International Development Association (hereinafter called “the Bank”) in an amount specified in BDS, toward the project named in BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract for which these Bidding Documents are issued.

2.2 Payment by the Bank will be made only at the request of the Borrower and upon approval by the Bank in accordance with the terms and conditions of the Loan (or other financing) Agreement. The Loan (or other financing) Agreement prohibits a withdrawal from the Loan (or other financing) account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the Borrower shall derive any rights from the Loan (or other financing) Agreement or have any claim to the proceeds of the Loan (or other financing).

3. Corrupt and Fraudulent Practices

3.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section VI.
3.2 In further pursuance of this policy, Bidders shall permit and shall cause its agents (where declared or not), sub-Bidders, sub-consultants, service providers or suppliers and to permit the Bank to inspect all accounts, records and other documents relating to the submission of the application, bid submission (in case prequalified), and contract performance (in the case of award), and to have them audited by auditors appointed by the Bank.

4. Eligible Bidders

4.1 A Bidder may be a firm that is a private entity, a government-owned entity—subject to ITB 4.5—or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution. Unless specified in the BDS, there is no limit on the number of members in a JV.

4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this bidding process, if the Bidder:

(a) directly or indirectly controls, is controlled by or is under common control with another Bidder; or

(b) receives or has received any direct or indirect subsidy from another Bidder; or

(c) has the same legal representative as another Bidder; or

(d) has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; or

(e) participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which such Bidder is involved. However, this does not limit the inclusion of the same Sub-Bidder in more than one bid; or

(f) any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the
works that are the subject of the bid; or

(g) any of its affiliates has been hired (or is proposed to be hired) by the Purchaser or Borrower for the Contract implementation; or

(h) would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or

(i) has a close business or family relationship with a professional staff of the Borrower (or of the project implementing agency, or of a recipient of a part of the loan) who: (i) are directly or indirectly involved in the preparation of the bidding documents or specifications of the contract, and/or the bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Bank throughout the procurement process and execution of the contract

4.3 A Bidder may have the nationality of any country, subject to the restrictions pursuant to ITB 4.7. A Bidder shall be deemed to have the nationality of a country if the Bidder is constituted, incorporated or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed sub-Bidders or sub-consultants for any part of the Contract including related Services.

4.4 A Bidder that has been sanctioned by the Bank in accordance with the above ITB 3.1, including in accordance with the Bank’s Guidelines on Preventing and Combating Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (“Anti-Corruption Guidelines”), shall be ineligible to be prequalified for, bid for, or be awarded a Bank-financed contract or benefit from a Bank-financed contract, financially or otherwise, during such period of time as the Bank shall have determined. The list of debarred firms and individuals is available at the electronic address specified in the BDS.
Section I Instructions to Bidders

4.5 Bidders that are Government-owned enterprises or institutions in the Purchaser’s Country may participate only if they can establish that they (i) are legally and financially autonomous (ii) operate under commercial law, and (iii) are not dependent agencies of the Purchaser. To be eligible, a government-owned enterprise or institution shall establish to the Bank’s satisfaction, through all relevant documents, including its Charter and other information the Bank may request, that it: (i) is a legal entity separate from the government (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to the government, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt; and (iv) is not bidding for a contract to be awarded by the department or agency of the government which under their applicable laws or regulations is the reporting or supervisory authority of the enterprise or has the ability to exercise influence or control over the enterprise or institution.

4.6 A Bidder shall not be under suspension from bidding by the Purchaser as the result of the operation of a Bid–Securing Declaration.

4.7 Firms and individuals may be ineligible if so indicated in Section V and (a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country, provided that the Bank is satisfied that such exclusion does not preclude effective competition for the supply of goods or the contracting of works or services required; or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s country prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country.

4.8 A Bidder shall provide such evidence of eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

5. Eligible Goods and Related Services

5.1 All the Goods and Related Services to be supplied under the Contract and financed by the Bank may have their origin in any country in accordance with Section V, Eligible Countries.

5.2 For purposes of this Clause, the term “goods” includes commodities, raw material, machinery, equipment, and industrial plants; and “related services” includes services such as insurance, installation, training, and initial maintenance.

5.3 The term “origin” means the country where the goods have been
mined, grown, cultivated, produced, manufactured or processed; or, through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

**B. Contents of Bidding Document**

<table>
<thead>
<tr>
<th>6. Sections of Bidding Document</th>
<th>6.1 The Bidding Documents consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.</th>
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| **PART 2  Supply Requirements**  | • Section VII. Schedule of Requirements  |
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|                                  | • Section IX. Special Conditions of Contract (SCC)  
|                                  | • Section X. Contract Forms  |

6.2 The Invitation for Bids issued by the Purchaser is not part of the Bidding Document.

6.3 Unless obtained directly from the Purchaser, the Purchaser is not responsible for the completeness of the document, responses to requests for clarification, the Minutes of the pre-Bid meeting (if any), or Addenda to the Bidding Document in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Purchaser shall prevail.

6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents and to furnish with its Bid all information or documentation as is required by the Bidding Documents.
### 7. Clarification of Bidding Documents

| 7.1 | A Bidder requiring any clarification of the Bidding Document shall contact the Purchaser in writing at the Purchaser’s address specified in the BDS. The Purchaser will respond in writing to any request for clarification, provided that such request is received prior to the deadline for submission of bids within a period specified in the BDS. The Purchaser shall forward copies of its response to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so specified in the BDS, the Purchaser shall also promptly publish its response at the web page identified in the BDS. Should the clarification result in changes to the essential elements of the Bidding Documents, the Purchaser shall amend the Bidding Documents following the procedure under ITB 8 and ITB 22.2. |

### 8. Amendment of Bidding Document

| 8.1 | At any time prior to the deadline for submission of bids, the Purchaser may amend the Bidding Documents by issuing addenda. |
| 8.2 | Any addendum issued shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Documents from the Purchaser in accordance with ITB 6.3. The Purchaser shall also promptly publish the addendum on the Purchaser’s web page in accordance with ITB 7.1. |
| 8.3 | To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, the Purchaser may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2. |

### C. Preparation of Bids

**9. Cost of Bidding**

| 9.1 | The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process. |

**10. Language of Bid**

| 10.1 | The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern. |
### 11. Documents Comprising the Bid

**11.1** The Bid shall comprise the following:

- (a) Letter of Bid in accordance with ITB 12;
- (b) completed schedules, in accordance with ITB 12 and 14;
- (c) Bid Security or Bid-Securing Declaration, in accordance with ITB 19.1;
- (d) alternative bids, if permissible, in accordance with ITB 13;
- (e) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
- (f) documentary evidence in accordance with ITB 17 establishing the Bidder’s qualifications to perform the contract if its bid is accepted;
- (g) documentary evidence in accordance with ITB 17 establishing the Bidder’s eligibility to bid;
- (h) documentary evidence in accordance with ITB 16, that the Goods and Related Services to be supplied by the Bidder are of eligible origin;
- (i) documentary evidence in accordance with ITB 16 and 30, that the Goods and Related Services conform to the Bidding Documents;
- (j) any other document **required in the BDS.**

**11.2** In addition to the requirements under ITB 11.1, bids submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful bid shall be signed by all members and submitted with the bid, together with a copy of the proposed Agreement.

**11.3** The Bidder shall furnish in the Letter of Bid information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.

### 12. Letter of Bid and Price Schedules

**12.1.** The Letter of Bid and Price Schedules shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.2. All blank spaces shall be filled in with the information requested.

### 13. Alternative Bids

**13.1.** Unless otherwise **specified in the BDS,** alternative bids shall not
14. Bid Prices and Discounts

14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Price Schedules shall conform to the requirements specified below.

14.2 All lots (contracts) and items must be listed and priced separately in the Price Schedules.

14.3 The price to be quoted in the Letter of Bid in accordance with ITB 12.1 shall be the total price of the bid, excluding any discounts offered.

14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Letter of Bid, in accordance with ITB 12.1.

14.5 Prices quoted by the Bidder shall be fixed during the Bidder’s performance of the Contract and not subject to variation on any account, unless otherwise specified in the BDS. A bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB 29. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.

14.6 If so specified in ITB 1.1, bids are being invited for individual lots (contracts) or for any combination of lots (packages). Unless otherwise specified in the BDS, prices quoted shall correspond to 100% of the items specified for each lot and to 100% of the quantities specified for each item of a lot. Bidders wishing to offer discounts for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4 provided the bids for all lots (contracts) are opened at the same time.

14.7 The terms EXW, CIP, and other similar terms shall be governed by the rules prescribed in the current edition of INCOTERMS, published by The International Chamber of Commerce, as specified in the BDS.

14.8 Prices shall be quoted as specified in each Price Schedule included in Section IV, Bidding Forms. The dis-aggregation of price components is required solely for the purpose of facilitating the comparison of bids by the Purchaser. This shall not in any way limit the Purchaser’s right to contract on any of the terms.
offered. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Section V, Eligible Countries. Similarly, the Bidder may obtain insurance services from any eligible country in accordance with Section V, Eligible Countries. Prices shall be entered in the following manner:

(a) For Goods manufactured in the Purchaser’s Country:

(i) the price of the Goods quoted EXW (ex-works, ex-factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods;

(ii) any Purchaser’s Country sales tax and other taxes which will be payable on the Goods if the contract is awarded to the Bidder; and

(iii) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) specified in the BDS.

(b) For Goods manufactured outside the Purchaser’s Country, to be imported:

(i) the price of the Goods, quoted CIP named place of destination, in the Purchaser’s Country, as specified in the BDS;

(ii) the price for inland transportation, insurance, and other local services required to convey the Goods from the named place of destination to their final destination (Project Site) specified in the BDS;

(c) For Goods manufactured outside the Purchaser’s Country, already imported:

(i) the price of the Goods, including the original import value of the Goods; plus any mark-up (or rebate); plus any other related local cost, and custom duties and other import taxes already paid or to be paid on the Goods already imported.

(ii) the custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already imported;
(iii) the price of the Goods, obtained as the difference between (i) and (ii) above;

(iv) any Purchaser’s Country sales and other taxes which will be payable on the Goods if the contract is awarded to the Bidder; and

(v) the price for inland transportation, insurance, and other local services required to convey the Goods from the named place of destination to their final destination (Project Site) **specified in the BDS.**

(d) for Related Services, other than inland transportation and other services required to convey the Goods to their final destination, whenever such Related Services are specified in the Schedule of Requirements:

(i) the price of each item comprising the Related Services (inclusive of any applicable taxes).

### 15. Currencies of Bid and Payment

15.1 The currency(ies) of the bid and the currency(ies) of payments shall be **as specified in the BDS.** The Bidder shall quote in the currency of the Purchaser’s Country the portion of the bid price that corresponds to expenditures incurred in the currency of the Purchaser’s country, unless otherwise **specified in the BDS.**

15.2 The Bidder may express the bid price in any currency. If the Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three foreign currencies in addition to the currency of the Purchaser’s Country.

### 16. Documents Establishing the Eligibility and Conformity of the Goods and Related Services

16.1 To establish the eligibility of the Goods and Related Services in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Bidding Forms.

16.2 To establish the conformity of the Goods and Related Services to the Bidding Documents, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods conform to the technical specifications and standards specified in Section VII, Schedule of Requirements.

16.3 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of
deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.

16.4 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period specified in the BDS following commencement of the use of the goods by the Purchaser.

16.5 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser’s satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.

17. Documents Establishing the Eligibility and Qualifications of the Bidder

17.1 To establish Bidder’s eligibility in accordance with ITB 4, Bidders shall complete the Letter of Bid, included in Section IV, Bidding Forms.

17.2 The documentary evidence of the Bidder’s qualifications to perform the contract if its bid is accepted shall establish to the Purchaser’s satisfaction:

(a) that, if required in the BDS, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer’s Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser’s Country;

(b) that, if required in the BDS, in case of a Bidder not doing business within the Purchaser’s Country, the Bidder is or will be (if awarded the contract) represented by an Agent in the country equipped and able to carry out the Supplier’s maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and

(c) that the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.

18. Period ofValidity of Bids

18.1. Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Purchaser in
accordance with ITB 22.1. A bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.

18.2. In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB Clause 19, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its bid, except as provided in ITB 18.3.

18.3. If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity, the Contract price shall be determined as follows:

(a) In the case of fixed price contracts, the Contract price shall be the bid price adjusted by the factor specified in the BDS.

(b) In the case of adjustable price contracts, no adjustment shall be made.

(c) In any case, bid evaluation shall be based on the bid price without taking into consideration the applicable correction from those indicated above.

19. Bid Security

19.1. The Bidder shall furnish as part of its bid, either a Bid-Securing Declaration or a bid security, as specified in the BDS, in original form and, in the case of a bid security, in the amount and currency specified in the BDS.

19.2. A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.

19.3. If a bid security is specified pursuant to ITB 19.1, the bid security shall be a demand guarantee in any of the following forms at the Bidder’s option:

(a) an unconditional guarantee issued by a bank or financial institution (such as an insurance, bonding or surety company);

(b) an irrevocable letter of credit;

(c) a cashier’s or certified check; or

(d) another security specified in the BDS,
from a reputable source from an eligible country. If the unconditional guarantee is issued by a financial institution located outside the Purchaser’s Country, the issuing financial institution shall have a correspondent financial institution located in the Purchaser’s Country to make it enforceable. In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Purchaser prior to bid submission. The bid security shall be valid for twenty-eight (28) days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

19.4. If a Bid Security is specified pursuant to ITB 19.1, any bid not accompanied by a substantially responsive Bid Security shall be rejected by the Purchaser as non-responsive.

19.5. If a Bid Security is specified pursuant to ITB 19.1, the Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder’s signing the contract and furnishing the Performance Security pursuant to ITB 42.

19.6. The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the contract and furnished the required performance security.

19.7. The Bid Security may be forfeited or the Bid Securing Declaration executed:

(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid, or any extension thereto provided by the Bidder; or

(b) if the successful Bidder fails to:

(i) sign the Contract in accordance with ITB41; or

(ii) furnish a performance security in accordance with ITB 42.

19.8. The bid security or Bid-Securing Declaration of a JV must be in the name of the JV that submits the bid. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, the bid security or Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2.

19.9. If a bid security is not required in the BDS, pursuant to ITB 19.1, and
(a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid, or

(b) if the successful Bidder fails to: sign the Contract in accordance with ITB 41; or furnish a performance security in accordance with ITB 42;

the Borrower may, if provided for in the BDS, declare the Bidder ineligible to be awarded a contract by the Purchaser for a period of time as stated in the BDS.

20. Format and Signing of Bid

20.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11 and clearly mark it “ORIGINAL.” Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked “ALTERNATIVE.” In addition, the Bidder shall submit copies of the bid, in the number specified in the BDS and clearly mark them “COPY.” In the event of any discrepancy between the original and the copies, the original shall prevail.

20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid where entries or amendments have been made shall be signed or initialed by the person signing the bid.

20.3 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.

20.4 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

21.1. The Bidder shall enclose the original and all copies of the bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as “ORIGINAL”, “ALTERNATIVE” and “COPY.” These envelopes containing the original and the copies shall then be enclosed in one single envelope.

21.2. The inner and outer envelopes shall:

(a) bear the name and address of the Bidder;
21.3. If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the bid.

22. Deadline for Submission of Bids

22.1. Bids must be received by the Purchaser at the address and no later than the date and time specified in the BDS. When so specified in the BDS, bidders shall have the option of submitting their bids electronically. Bidders submitting bids electronically shall follow the electronic bid submission procedures specified in the BDS.

22.2. The Purchaser may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents in accordance with ITB 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

23.1. The Purchaser shall not consider any bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by the Purchaser after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.

24. Withdrawal, Substitution, and Modification of Bids

24.1. A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization (the power of attorney) in accordance with ITB 20.2, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:

   (a) prepared and submitted in accordance with ITB 20 and 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” or “MODIFICATION;” and

   (b) received by the Purchaser prior to the deadline prescribed for submission of bids, in accordance with ITB 22.

24.2. Bids requested to be withdrawn in accordance with ITB 24.1
shall be returned unopened to the Bidders.

24.3. No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.

25. Bid Opening

25.1. Except as in the cases specified in ITB 23 and 24, the Purchaser shall publicly open and read out in accordance with ITB 25.3 all bids received by the deadline at the date, time and place specified in the BDS in the presence of Bidders’ designated representatives and anyone who choose to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 22.1, shall be as specified in the BDS.

25.2. First, envelopes marked “WITHDRAWAL” shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. If the withdrawal envelope does not contain a copy of the “power of attorney” confirming the signature as a person duly authorized to sign on behalf of the Bidder, the corresponding bid will be opened. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked “SUBSTITUTION” shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked “MODIFICATION” shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid opening. Only bids that are opened and read out at Bid opening shall be considered further.

25.3. All other envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Prices, per lot (contract) if applicable, including any discounts and alternative bids; the presence or absence of a Bid Security, if required; and any other details as the Purchaser may consider appropriate. Only discounts and alternative bids read out at Bid opening shall be considered for evaluation. The Letter of Bid and the Price Schedules are to be initialed by representatives of the Purchaser attending bid opening in the manner specified in the BDS. The Purchaser shall neither
discuss the merits of any bid nor reject any bid (except for late bids, in accordance with ITB 25.1).

25.4. The Purchaser shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot (contract) if applicable, including any discounts, and alternative bids; and the presence or absence of a Bid Security, if one was required. The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidder’s signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

E. Evaluation and Comparison of Bids

26. Confidentiality

26.1 Information relating to the evaluation of bids and recommendation of contract award, shall not be disclosed to bidders or any other persons not officially concerned with the bidding process until information on Contract Award is communicated to all Bidders in accordance with ITB 40.

26.2 Any effort by a Bidder to influence the Purchaser in the evaluation or contract award decisions may result in the rejection of its Bid.

26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.
<table>
<thead>
<tr>
<th>Section I Instructions to Bidders</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. Clarification of Bids</td>
</tr>
<tr>
<td>27.1</td>
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<tr>
<td>To assist in the examination, evaluation, comparison of the bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder in respect to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser’s request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the bids, in accordance with ITB 31.</td>
</tr>
<tr>
<td>27.2</td>
</tr>
<tr>
<td>If a Bidder does not provide clarifications of its bid by the date and time set in the Purchaser’s request for clarification, its bid may be rejected.</td>
</tr>
<tr>
<td>28. Deviations, Reservations, and Omissions</td>
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<tr>
<td>28.1</td>
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<tr>
<td>During the evaluation of bids, the following definitions apply:</td>
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<tr>
<td>(a) “Deviation” is a departure from the requirements specified in the Bidding Documents;</td>
</tr>
<tr>
<td>(b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and</td>
</tr>
<tr>
<td>(c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Documents</td>
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<tr>
<td>29. Determination of Responsiveness</td>
</tr>
<tr>
<td>29.1</td>
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<tr>
<td>The Purchaser’s determination of a bid’s responsiveness is to be based on the contents of the bid itself, as defined in ITB 11.</td>
</tr>
<tr>
<td>29.2</td>
</tr>
<tr>
<td>A substantially responsive Bid is one that meets the requirements of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:</td>
</tr>
<tr>
<td>(a) if accepted, would</td>
</tr>
<tr>
<td>(i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or</td>
</tr>
</tbody>
</table>
| (ii) limit in any substantial way, inconsistent with the Bidding Documents, the Purchaser’s rights or the
Bidder’s obligations under the Contract; or

(b) if rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive bids.

29.3 The Purchaser shall examine the technical aspects of the bid submitted in accordance with ITB 16 and ITB 17, in particular, to confirm that all requirements of Section VII, Schedule of Requirements have been met without any material deviation or reservation, or omission.

29.4 If a bid is not substantially responsive to the requirements of Bidding Documents, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

30. Nonconformities, Errors and Omissions

30.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonconformities in the Bid.

30.2 Provided that a bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

30.3 Provided that a bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component.

31. Correction of Arithmetical Errors

31.1 Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:

(a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;

(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed
31.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 31.1, shall result in the rejection of the Bid.

32. Conversion to Single Currency

32.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted in a single currency as specified in the BDS.

33. Margin of Preference

33.1 Unless otherwise specified in the BDS, a margin of preference shall not apply.

34. Evaluation of Bids

34.1 The Purchaser shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

34.2 To evaluate a Bid, the Purchaser shall consider the following:

(a) evaluation will be done for Items or Lots (contracts), as specified in the BDS; and the Bid Price as quoted in accordance with clause 14;

(b) price adjustment for correction of arithmetic errors in accordance with ITB 31.1;

(c) price adjustment due to discounts offered in accordance with ITB 14.3;

(d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 32;

(e) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 30.3;

(f) the additional evaluation factors are specified in Section III, Evaluation and Qualification Criteria;

34.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.

34.4 If these Bidding Documents allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Letter of Bid Form, is specified in Section III, Evaluation and Qualification Criteria.
34.5 The Purchaser’s evaluation of a bid will exclude and not take into account:

(a) in the case of Goods manufactured in the Purchaser’s Country, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder;

(b) in the case of Goods manufactured outside the Purchaser’s Country, already imported or to be imported, customs duties and other import taxes levied on the imported Good, sales and other similar taxes, which will be payable on the Goods if the contract is awarded to the Bidder;

(c) any allowance for price adjustment during the period of execution of the contract, if provided in the bid.

34.6 The Purchaser’s evaluation of a bid may require the consideration of other factors, in addition to the Bid Price quoted in accordance with ITB 14. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of bids, unless otherwise specified in the BDS from amongst those set out in Section III, Evaluation and Qualification Criteria. The criteria and methodologies to be used shall be as specified in ITB 34.2 (f).

35. Comparison of Bids

35.1 The Purchaser shall compare the evaluated prices of all substantially responsive bids established in accordance with ITB 34.2 to determine the lowest evaluated bid. The comparison shall be on the basis of CIP (place of final destination) prices for imported goods and EXW prices, plus cost of inland transportation and insurance to place of destination, for goods manufactured within the Borrower’s country, together with prices for any required installation, training, commissioning and other services. The evaluation of prices shall not take into account custom duties and other taxes levied on imported goods quoted CIP and sales and similar taxes levied in connection with the sale or delivery of goods.

36. Qualification of the Bidder

36.1 The Purchaser shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive bid meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

36.2 The determination shall be based upon an examination of the documentary evidence of the Bidder’s qualifications submitted by the Bidder, pursuant to ITB 17.
<table>
<thead>
<tr>
<th>Section</th>
<th>Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>36.3</td>
<td>An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Purchaser shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder’s qualifications to perform satisfactorily.</td>
</tr>
</tbody>
</table>

37. **Purchaser’s Right to Accept Any Bid, and to Reject Any or All Bids**

37.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

**F. Award of Contract**

38. **Award Criteria**

38.1 Subject to ITB 37.1, the Purchaser shall award the Contract to the Bidder whose bid has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

39. **Purchaser’s Right to Vary Quantities at Time of Award**

39.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section VII, Schedule of Requirements, provided this does not exceed the percentages specified in the BDS, and without any change in the unit prices or other terms and conditions of the bid and the Bidding Documents.

40. **Notification of Award**

40.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the “Letter of Acceptance”) shall specify the sum that the Purchaser will pay the Supplier in consideration of the supply of Goods (hereinafter and in the Conditions of Contract and Contract Forms called “the Contract Price”). At the same time, the Purchaser shall also notify all other Bidders of the results of the bidding and shall publish in UNDB online the results identifying the bid and lot (contract) numbers and the following information:

(i) name of each Bidder who submitted a Bid;

(ii) bid prices as read out at Bid Opening;

(iii) name and evaluated prices of each Bid that was evaluated;

(iv) name of bidders whose bids were rejected and the reasons for
their rejection; and

(v) name of the successful Bidder, and the Price it offered, as well as the duration and summary scope of the contract awarded.

40.2 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.

40.3 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with ITB 40.1, requests in writing the grounds on which its bid was not selected.

41. Signing of Contract

41.1 Promptly after notification, the Purchaser shall send the successful Bidder the Contract Agreement.

41.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.

41.3 Notwithstanding ITB 41.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, where such export restrictions arise from trade regulations from a country supplying those products/goods, systems or services, the Bidder shall not be bound by its bid, always provided however, that the Bidder can demonstrate to the satisfaction of the Purchaser and of the Bank that signing of the Contract Agreement has not been prevented by any lack of diligence on the part of the Bidder in completing any formalities, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract.

42. Performance Security

42.1 Within twenty eight (28) days of the receipt of notification of award from the Purchaser, the successful Bidder, if required, shall furnish the Performance Security in accordance with the GCC, subject to ITB 34.5, using for that purpose the Performance Security Form included in Section X, Contract Forms, or another Form acceptable to the Purchaser. If the Performance Security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Purchaser. A foreign institution providing a bond shall have a correspondent financial institution located in the Purchaser’s Country.

42.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute
sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose bid is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.
## Section II. Bid Data Sheet (BDS)

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

<table>
<thead>
<tr>
<th>ITB Clause Reference</th>
<th>A. General</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITB 1.1</td>
<td>The reference number of the Invitation for Bids is: <strong>BB(G)IT-3 [NDC]</strong></td>
</tr>
<tr>
<td>ITB 1.1</td>
<td>The Purchaser is: Bangladesh Bank represent by General Manager (Electro-Mechanical), Common Services Department-2, Bangladesh Bank, Head office.</td>
</tr>
<tr>
<td>ITB 1.1</td>
<td>The name of the NCB is: <strong>Supply, Installation, Testing, Commissioning, Implementation and related services of Generator and Substation Capacity Expansion for Information Systems.</strong>&lt;br&gt;The identification number of the NCB is: <strong>BB(G)IT-3 [NDC]</strong>&lt;br&gt;The number and identification of lots (contracts) comprising this NCB is: Single</td>
</tr>
<tr>
<td>ITB 2.1</td>
<td>The Borrower is: <strong>The People’s Republic of Bangladesh</strong></td>
</tr>
<tr>
<td>ITB 2.1</td>
<td>Loan or Financing Agreement amount: <strong>SDR 213.4 Million</strong></td>
</tr>
<tr>
<td>ITB 2.1</td>
<td>The name of the Project is: <strong>Financial Sector Support Project</strong></td>
</tr>
<tr>
<td>ITB 4.1</td>
<td>Maximum number of members in the JV shall be: 02(two)</td>
</tr>
<tr>
<td>ITB 4.4</td>
<td>A list of debarred firms and individuals is available on the Bank’s external website: <a href="http://www.worldbank.org/debarr">http://www.worldbank.org/debarr</a></td>
</tr>
</tbody>
</table>

### B. Contents of Bidding Documents

<p>| ITB 6.3              | <strong>Pre-Bid meeting shall be held:</strong>&lt;br&gt;<em>Time: 03:00 PM BST</em>&lt;br&gt;<em>Date: 31 March 2019</em>&lt;br&gt;<em>Place: Main Building</em>(4<em>th</em> Floor), Jahangir Alam Conference hall, Bangladesh Bank, Head Office, Motijheel C/A, Dhaka-1000,Bangladesh. |
| ITB 7.1              | For <strong>Clarification of bid purposes</strong> only, the Purchaser’s address is:&lt;br&gt;<em>Project Director</em>&lt;br&gt;<em>Financial Sector Support Project</em>&lt;br&gt;<em>Main Building</em>(4<em>th</em> Floor), Bangladesh Bank, Head Office, Motijheel C/A, Dhaka- 1000, Bangladesh. |
|                      | Telephone: <strong>+880-2-9530071</strong> |</p>
<table>
<thead>
<tr>
<th>C. Preparation of Bids</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ITB 7.1</strong></td>
</tr>
</tbody>
</table>

**C. Preparation of Bids**

**ITB 10.1**

The language of the bid is: *English*. All correspondence exchange shall be in *English* language.

Language for translation of supporting documents and printed literature is *English*.

**ITB 11.1 (j)**

The Bidder shall submit the following additional documents in its bid:

a) Certificate of Incorporation;

b) Up to date Trade License, Income Tax Clearance and VAT Registration Certificate;

c) Work Order or Completion Certificate mentioning contract value, time, work summary, purchaser’s detailed contact information etc;

d) Audited Balance Sheet and Income Statement;

e) Bank Certificate mentioning undrawn balance in case of credit line which shall be made available to the Bidder;

f) Details of work Experience:

g) Specific experience: The Bidder shall have Satisfactorily completed at least 01(One) of similar nature work (supply and installation of minimum 500KVA, 11/0.415KV Substation with HT AVR, HT Panel, LT Panel, PFI Panel etc and 200KVA generator) in any Government/Semi-Government/Autonomous Organization during last 07(Seven) years. The Tenderer shall have to furnish work completion certificate in this respect from officer not below the rank of Executive Engineer or equivalent;

h) Authentic documentary evidence (Catalogue, Certificate and other relevant documents) that Goods confirm to the technical specification and standard specified in Section VII(3) & Schedule of Requirements, Catalogue, Design, Drawing etc specially for Specially for Generator, HT AVR, Dry-type Transformer, HT Switchgear Panel, LT Switchgear Panel, PFI Panel, VCB, ACB, TPMCCB, Magnetic contractor of ATS etc received from the manufacturer/principal must be submit with the offer, without which the tender will be rejected.

i) ABC Category Electrical Contracting and Electrical Supervisory License
from Electrical Licensing Board, Bangladesh;

j) Manufacturer’s Guarantee & Warranty Certificate to the effect that the Generator, HT AVR, Transformer, HT Switchgear, PFI Plant, LT Switchgear, Generator, ATS etc is suitable for use in tropical country like Bangladesh;

k) Specifications Submission and Compliance Sheet;

l) Standard Certificate : UL/ULC, ISO etc as per standard specified in Section VII(3);

m) Detailed work programme of execution of all works within the scheduled time in bar chart form as per scope of work (note: all the work shall have to be carried out without hampering the regular power supply Specially office hours & days).

| ITB 13.1 | Alternative Bids shall not be considered. |
| ITB 14.5 | The prices quoted by the Bidder shall not be subject to adjustment during the performance of the Contract. |
| ITB 14.6 | Prices quoted for each lot (contract) shall correspond at 100 percent of the items specified for each lot (contract). Prices quoted for each item of a lot shall correspond at 100 percent of the quantities specified for this item of a lot. |
| ITB 14.8 (b) (i) and (c) (v) | Place of Destination: Bangladesh Bank Training Academy (BBTA), Mirpur, Dhaka, Bangladesh. |
| ITB 14.8 (a) (iii);(b)(ii) and (c)(v) | “Final destination (Project Site)”: Bangladesh Bank Training Academy (BBTA), Mirpur, Dhaka, Bangladesh. |
| ITB 15.1 | The prices shall be quoted by the bidder in: BDT |
| ITB 16.4 | Period of time the Goods are expected to be functioning (for the purpose of spare parts): Minimum six (6) years |
| ITB 17.2 (a) | Manufacturer’s authorization is: required; Specially for Generator, HT AVR, Dry-type Transformer, HT Switchgear Panel, LT Switchgear Panel, PFI Panel, |

---

**Notes:**

- **ITB 13.1**: Alternative Bids shall not be considered.
- **ITB 14.5**: The prices quoted by the Bidder shall not be subject to adjustment during the performance of the Contract.
- **ITB 14.6**: Prices quoted for each lot (contract) shall correspond at 100 percent of the items specified for each lot (contract). Prices quoted for each item of a lot shall correspond at 100 percent of the quantities specified for this item of a lot.
- **ITB 14.8 (b) (i) and (c) (v)**: Place of Destination: Bangladesh Bank Training Academy (BBTA), Mirpur, Dhaka, Bangladesh.
- **ITB 14.8 (a) (iii);(b)(ii) and (c)(v)**: “Final destination (Project Site)”: Bangladesh Bank Training Academy (BBTA), Mirpur, Dhaka, Bangladesh.
- **ITB 15.1**: The prices shall be quoted by the bidder in: BDT
- **ITB 16.4**: Period of time the Goods are expected to be functioning (for the purpose of spare parts): Minimum six (6) years
- **ITB 17.2 (a)**: Manufacturer’s authorization is: required; Specially for Generator, HT AVR, Dry-type Transformer, HT Switchgear Panel, LT Switchgear Panel, PFI Panel,
| ITB 17.2 (b) | After sales service is: **required** |
| ITB 18.1 | The bid validity period shall be **119 days**. |
| ITB 18.3 (a) | The bid price shall be adjusted by the following factor(s): N.A. |
| ITB 19.1 | A Bid Security shall be required. The amount and currency of the bid security shall be BDT 22,00,000.00 (BDT twenty two lakh) only in the form of Bank Guarantee in favour of **Project Director, Financial Sector Support Project, Bangladesh Bank, Head Office**. Any bid accompanied by a bid security of any smaller/lesser amount specified above shall be rejected as non-responsive. |
| ITB 19.3 (d) | Other types of acceptable securities: None |
| ITB 20.1 | In addition to the original of the bid, the number of copies is: **Two (2) copies and one (1) electronic copy in portable document format (pdf) in Compact Disc.** |
| ITB 20.2 | The written confirmation of authorization to sign on behalf of the Bidder shall consist of: **Name, Position in the Bidding organization and Attested copy of NID and attestation of Specimen Signature.** |
| **D. Submission and Opening of Bids** | |
| ITB 22.1 | For **bid submission purposes** only, the Purchaser’s address is:  
*Project Director, Financial Sector Support Project, Main Building(4th Floor) Jahangir Alam Conference hall, Bangladesh Bank, Head Office, Motijheel C/A, Dhaka-1000, Bangladesh.*  
The deadline for bid submission is:  
Date: 24 April, 2019  
Time: **03:30 p.m. Bangladesh Standard Time**  
Bidders **shall not** have the option of submitting their bids electronically. |
| ITB 25.1 | The bid opening shall take place at:  
*Bangladesh Bank, Main Building, Head Office, Motijheel C/A, Floor/ Room number: 4th Floor, Jahangir Alam Conference hall, City: Dhaka-1000, Bangladesh.*  
Date: **24 April, 2019**  
Time: **03:40 p.m. Bangladesh Standard Time** |
<table>
<thead>
<tr>
<th>ITB 25.3</th>
<th>The Letter of Bid and Price Schedules shall be initialed by 03 (Three) representatives of the Purchaser conducting Bid opening.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E. Evaluation and Comparison of Bids</strong></td>
<td></td>
</tr>
<tr>
<td>ITB 32.1</td>
<td>The currency that shall be used for bid evaluation and comparison currency is: <em>Bangladesh Taka</em></td>
</tr>
<tr>
<td>ITB 34.2(a)</td>
<td>Evaluation will be done for Lot.</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>ITB 34.6</td>
<td>The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria:</td>
</tr>
<tr>
<td></td>
<td>Deviation in Delivery schedule: <em>No</em>.</td>
</tr>
<tr>
<td></td>
<td>Deviation in payment schedule: <em>No</em>.</td>
</tr>
<tr>
<td></td>
<td>The cost of major replacement components, mandatory spare parts, and service: <em>No</em>.</td>
</tr>
<tr>
<td></td>
<td>The availability in the Purchaser’s Country of spare parts and after-sales services for the equipment offered in the bid: <em>No</em></td>
</tr>
<tr>
<td></td>
<td>the projected operating and maintenance costs during the life of the equipment: <em>No</em></td>
</tr>
<tr>
<td></td>
<td>The performance and productivity of the equipment offered: <em>No</em></td>
</tr>
</tbody>
</table>
| ITB 39.1 | The maximum percentage by which quantities may be increased is: *As per PPR-2008 Rules.*  
The maximum percentage by which quantities may be decreased is: *As per PPR-2008 Rules.* |
Section III. Evaluation and Qualification Criteria

This Section contains all the criteria that the Purchaser shall use to evaluate a bid and qualify the Bidders. in accordance with ITB 34 and ITB 36, no other factors, methods or criteria shall be used.

Contents

1. Margin of Preference (ITB 33) ........................................................................................................... 38
2. Evaluation (ITB 34) ......................................................................................................................... 38
3. Qualification (ITB 36) .................................................................................................................... 38
1. Margin of Preference (ITB 33): N/A

2. Evaluation (ITB 34)

2.1. Evaluation Criteria (ITB 34.6)
The Purchaser’s evaluation of a bid may take into account to the Bid Price (the lowest-evaluated bid) quoted in accordance with ITB 14.6 & ITB 14.8(b)(iii);(b)(i),(ii);(c)(v)

3. Qualification (ITB 36)

3.1 Postqualification Requirements (ITB 36.1)
After determining the lowest-evaluated bid in accordance with ITB 35.1, the Purchaser shall carry out the postqualification of the Bidder in accordance with ITB 36, using only the requirements specified. Requirements not included in the text below shall not be used in the evaluation of the Bidder’s qualifications.

(a) If Bidder is Manufacturer:

(i) Financial Capability

1. The Bidder shall furnish documentary evidence that it meets the following financial requirement(s): The minimum amount of liquid assets i.e working capital or credit line(s) of the Bidder shall be Tk 6,00,00,000.00 (Taka Six Crore) only.
2. Turnover: The Bidder must demonstrate present minimum average annual turnover of Bangladesh BDT 5,00,00,000.00 (Taka Five Crore) equivalent calculated as total certified payments received for contracts in progress or completed in any particular year within the last seven (07) years;

(ii) Experience and Technical Capacity

1. The Bidder must have been in business for the last seven (07) years;
2. The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement(s): The Bidder shall have Satisfactorily completed at least 01(One) of similar nature work (supply and installation of minimum 500KVA, 11/0.415KV Substation with HT AVR, HT Panel, LT Panel, PFI Panel etc and 200KVA generator) in any Government/Semi-Government/Autonomous Organization during last 07(Seven) years. The Tenderer shall have to furnish work completion certificate in this respect from officer not below the rank of Executive Engineer or equivalent;
3. The bidder must have at least three years proven experience in providing warranty support services.
(iii) Documentary Evidence

The Bidder shall furnish documentary evidence to demonstrate that the Goods it offers meet the following usage requirement: *Test result, Drawing, Design of Goods confirm technical specification of goods and Standard Certificate as per Schedule requirements*;

(b) If Bidder is not manufacturer:

If a Bidder is not a manufacturer, but is offering the Goods on behalf of the Manufacturer under Manufacturer’s Authorization Form (Section IV, Bidding Forms),

(i) Financial Capability:

1. The Bidder shall furnish documentary evidence that it meets the following financial requirement(s): The minimum amount of liquid assets i.e working capital or credit line(s) of the Bidder shall be Tk 6,00,00,000.00 (Taka Six Crore) only.
2. Turnover: The Bidder must demonstrate present minimum average annual turnover of BDT 5,00,00,000.00 (Bangladesh Taka Five Crore) equivalent calculated as total certified payments received for contracts in progress or completed in any particular year within the last seven (07) years;

(ii) Experience and Technical Capacity

1. The Bidder must have been in business for the last seven (07) years;
2. The Bidder shall furnish documentary evidence to demonstrate that it meets the following experience requirement(s): The Bidder shall have Satisfactorily completed at least 01(One) of similar nature work (supply and installation of minimum 500KVA, 11/0.415KV Substation with HT AVR, HT Panel, LT Panel, PFI Panel etc and 200KVA generator) in any Government/Semi-Government/Autonomous Organization during last 07(Seven) years. The Tenderer shall have to furnish work completion certificate in this respect from officer not below the rank of Executive Engineer or equivalent;
3. The bidder must have at least three years proven experience in providing warranty support services.

(iii) Documentary Evidence

The Bidder shall furnish documentary evidence to demonstrate that the Goods it offers meet the following usage requirement: Authentic documentary evidence that Goods confirm to the technical specification and standard specified in Section VII, Schedule of Requirements: Catalogue, Design, Drawing etc;
# Section IV. Bidding Forms

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<td>Price Schedule: B: PRICE OF RELATED SERVICES (Including Incidental services, if any) AND COMPLETION SCHEDULE</td>
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<td>55</td>
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</table>
Letter of Bid

The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder’s complete name and address.

Date: [insert date (as day, month and year) of Bid Submission]
Date of this Bid submission: ............
NCB No.: BB(G)IT-03 [NDC]
Invitation for Bid No.: BB(G)IT-03 [NDC]

To: Project Director
Financial Sector Support Project
Main Building, Head Office
Bangladesh Bank,
Motijheel C/A, Dhaka

(a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB 8);
(b) We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
(c) We have not been suspended nor declared ineligible by the Purchaser based on execution of a Bid Securing Declaration in the Purchaser’s country in accordance with ITB 4.6
(d) We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods:
   [insert a brief description of the Goods and Related Services];
(e) The total price of our Bid, excluding any discounts offered in item (f) below is:

In case of only one lot, total price of the Bid [insert the total price of the bid in words and figures, indicating the various amounts and the respective currencies];
In case of multiple lots, total price of each lot [insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies];
In case of multiple lots, total price of all lots (sum of all lots) [insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies];
(f) The discounts offered and the methodology for their application are:
   (i) The discounts offered are: [Specify in detail each discount offered.]
(ii) The exact method of calculations to determine the net price after application of discounts is shown below: **[Specify in detail the method that shall be used to apply the discounts]**;

(g) Our bid shall be valid for a period of [specify the number of calendar days] days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(h) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents;

(i) We are not participating, as a Bidder or as a Sub-Bidder, in more than one bid in this bidding process in accordance with ITB 4.2(e), other than alternative bids submitted in accordance with ITB 13;

(j) We, along with any of our Sub-Bidders, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the World Bank Group in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the World Bank and other development banks. Further, we are not ineligible under the Employer’s country laws or official regulations or pursuant to a decision of the United Nations Security Council;

(k) We are not a government owned entity/ We are a government owned entity but meet the requirements of ITB 4.5;¹

(l) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: **[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]**

<table>
<thead>
<tr>
<th>Name of Recipient</th>
<th>Address</th>
<th>Reason</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(If none has been paid or is to be paid, indicate “none.”)

(m) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed; and

¹ *Bidder to use as appropriate*² The amount of the Bond shall be denominated in the currency of the Purchaser’s country or the equivalent amount in a freely convertible currency.
(n) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

(o) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption.

Name of the Bidder* [insert complete name of person signing the Bid]

Name of the person duly authorized to sign the Bid on behalf of the Bidder** [insert complete name of person duly authorized to sign the Bid]

Title of the person signing the Bid [insert complete title of the person signing the Bid]

Signature of the person named above [insert signature of person whose name and capacity are shown above]

Date signed [insert date of signing] day of [insert month], [insert year]

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules.
Bidder Information Form

[The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]

Date: [insert date (as day, month and year) of Bid Submission]

NCB No.: BB(G)IT-3 [NDC]

Page ________ of ______ pages

<table>
<thead>
<tr>
<th>1. Bidder’s Name</th>
<th>[insert Bidder’s legal name]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. In case of JV, legal name of each member:</td>
<td>[insert legal name of each member in JV]</td>
</tr>
<tr>
<td>3. Bidder’s actual or intended country of registration:</td>
<td>[insert actual or intended country of registration]</td>
</tr>
<tr>
<td>4. Bidder’s year of registration:</td>
<td>[insert Bidder’s year of registration]</td>
</tr>
<tr>
<td>5. Bidder’s Address in country of registration:</td>
<td>[insert Bidder’s legal address in country of registration]</td>
</tr>
<tr>
<td>6. Bidder’s Authorized Representative Information</td>
<td></td>
</tr>
<tr>
<td>Name:</td>
<td>[insert Authorized Representative’s name]</td>
</tr>
<tr>
<td>Address:</td>
<td>[insert Authorized Representative’s Address]</td>
</tr>
<tr>
<td>Telephone/Fax numbers:</td>
<td>[insert Authorized Representative’s telephone/fax numbers]</td>
</tr>
<tr>
<td>Email Address:</td>
<td>[insert Authorized Representative’s email address]</td>
</tr>
<tr>
<td>7. Attached are copies of original documents of</td>
<td>[check the box(es) of the attached original documents]</td>
</tr>
<tr>
<td>☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITB 4.3.</td>
<td></td>
</tr>
<tr>
<td>☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1.</td>
<td></td>
</tr>
<tr>
<td>☐ In case of Government-owned enterprise or institution, in accordance with ITB 4.5 documents establishing:</td>
<td></td>
</tr>
<tr>
<td>• Legal and financial autonomy</td>
<td></td>
</tr>
<tr>
<td>• Operation under commercial law</td>
<td></td>
</tr>
<tr>
<td>• Establishing that the Bidder is not dependent agency of the Purchaser</td>
<td></td>
</tr>
<tr>
<td>2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.</td>
<td></td>
</tr>
</tbody>
</table>
## Bidder’s JV Members Information Form

[The Bidder shall fill in this Form in accordance with the instructions indicated below. The following table shall be filled in for the Bidder and for each member of a Joint Venture].

**Date:** [insert date (as day, month and year) of Bid Submission]

**NCB No.:** BB(G)IT-3 [NDC]

---

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bidder’s Name: [insert Bidder’s legal name]</td>
</tr>
<tr>
<td>2.</td>
<td>Bidder’s JV Member’s name: [insert JV’s Member legal name]</td>
</tr>
<tr>
<td>3.</td>
<td>Bidder’s JV Member’s country of registration: [insert JV’s Member country of registration]</td>
</tr>
<tr>
<td>4.</td>
<td>Bidder’s JV Member’s year of registration: [insert JV’s Member year of registration]</td>
</tr>
<tr>
<td>5.</td>
<td>Bidder’s JV Member’s legal address in country of registration: [insert JV’s Member legal address in country of registration]</td>
</tr>
<tr>
<td>6.</td>
<td>Bidder’s JV Member’s authorized representative information</td>
</tr>
<tr>
<td></td>
<td>Name: [insert name of JV’s Member authorized representative]</td>
</tr>
<tr>
<td></td>
<td>Address: [insert address of JV’s Member authorized representative]</td>
</tr>
<tr>
<td></td>
<td>Telephone/Fax numbers: [insert telephone/fax numbers of JV’s Member authorized representative]</td>
</tr>
<tr>
<td></td>
<td>Email Address: [insert email address of JV’s Member authorized representative]</td>
</tr>
<tr>
<td>7.</td>
<td>Attached are copies of original documents of [check the box(es) of the attached original documents]</td>
</tr>
<tr>
<td></td>
<td>☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.3.</td>
</tr>
<tr>
<td></td>
<td>☐ In case of a Government-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and absence of dependent status, in accordance with ITB 4.5.</td>
</tr>
<tr>
<td>2.</td>
<td>Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.</td>
</tr>
</tbody>
</table>
Price Schedule Forms

[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the Price Schedules shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]
Price Schedule for Goods:

A: PRICE OF GOODS (Including Spare Parts, if any) AND DELIVERY SCHEDULE

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item No.</td>
<td>Description Of Item</td>
<td>Country of Origin</td>
<td>Unit of Measurement</td>
<td>Qty Of units Required</td>
<td>Unit price</td>
<td>Total price (col. 4 × 5)</td>
<td>Point of Delivery as per Schedule of Requirement</td>
<td>Delivery Period Offered as per Schedule of Requirement</td>
</tr>
</tbody>
</table>

**Note 1:** All unit rates and prices quoted by the Bidders against each basic item or activity shall include the Bidder’s profit, overheads, VAT, all type of IT and all other charges including corresponding incidental service charges and premiums for Banking and insurances, as applicable and shall be the delivered price in final destination or at point of delivery and, thus forth the total Tender Price quoted by the Bidders.

**Note 2:** Bidders will complete these columns as appropriate following the details specified in Schedule of Requirements.

| Signature: | [insert signature of authorized representative of the Bidder] |
| Name: | [insert full name of signatory with National ID] |
| In the capacity of: | [insert designation of signatory] |
| Duly authorized to sign the Bid for and on behalf of the Bidder |
B: PRICE OF RELATED SERVICES (Including Incidental services, if any) AND COMPLETION SCHEDULE:

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description Of Item</th>
<th>Country of Origin</th>
<th>Unit of Measurement</th>
<th>Qty Of units Required</th>
<th>Unit price</th>
<th>Total price (col. 4 × 5)</th>
<th>Point of Delivery as per Schedule of Requirement</th>
<th>Delivery Period Offered as per Schedule of Requirement</th>
</tr>
</thead>
</table>

**Note 1:** All unit rates and prices quoted by the Bidders against each basic item or activity shall include the Bidder’s profit, overheads, VAT, all type of IT and all other charges including corresponding incidental service charges and premiums for Banking and insurances, as applicable and shall be the delivered price in final destination or at point of delivery and, thus forth the total Tender Price quoted by the Bidders.

**Note 2:** Bidders will complete these columns as appropriate following the details specified in Schedule of Requirements.

Signature: [insert signature of authorized representative of the Bidder]

Name: [insert full name of signatory with National ID]

In the capacity of: [insert designation of signatory]

Duly authorised to sign the Bid for and on behalf of the Bidder
Form of Bid Security

(Bank Guarantee)

[The bank shall fill in this Bank Guarantee Form in accordance with the instructions indicated.]

[Guarantor letterhead or SWIFT identifier code]

Project Director
Financial Sector Support Project
Main Building, Head Office
Bangladesh Bank,
Motijheel C/A, Dhaka

IFB No.: BB(G)IT-3 [NDC]

Alternative No.: [Insert identification No if this is a Bid for an alternative]

Date: [Insert date of issue]

BID GUARANTEE No.: [Insert guarantee reference number]

Guarantor: [Insert name and address of place of issue, unless indicated in the letterhead]

We have been informed that ______ [insert name of the Bidder, which in the case of a joint venture shall be the name of the joint venture (whether legally constituted or prospective) or the names of all members thereof] (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its bid (hereinafter called "the Bid") for the execution of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator and Substation Capacity Expansion for Information Systems under Invitation for Bids No. BB(G)IT-3 [NDC] ("the IFB").

Furthermore, we understand that, according to the Beneficiary’s conditions, bids must be supported by a bid guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of __________ (__________) upon receipt by us of the Beneficiary’s complying demand, supported by the Beneficiary’s statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:
(a) has withdrawn its Bid during the period of bid validity set forth in the Applicant’s Letter of Bid (“the Bid Validity Period”), or any extension thereto provided by the Applicant; or

(b) having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period or any extension thereto provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the performance security, in accordance with the Instructions to Bidders (“ITB”) of the Beneficiary’s bidding document.

This guarantee will expire: (a) if the Applicant is the successful bidder, upon our receipt of copies of the contract agreement signed by the Applicant and the performance security issued to the Beneficiary in relation to such contract agreement; or (b) if the Applicant is not the successful bidder, upon the earlier of (i) our receipt of a copy of the Beneficiary’s notification to the Applicant of the results of the bidding process; or (ii) twenty-eight days after the end of the Bid Validity Period.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.

_____________________________

[Signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.
Form of Bid Security (Bid Bond) (Not used)

[The Surety shall fill in this Bid Bond Form in accordance with the instructions indicated.]

BOND NO. ______________________

BY THIS BOND [name of Bidder] as Principal (hereinafter called “the Principal”), and [name, legal title, and address of surety], authorized to transact business in [name of country of Purchaser], as Surety (hereinafter called “the Surety”), are held and firmly bound unto [name of Purchaser] as Obligee (hereinafter called “the Purchaser”) in the sum of [amount of Bond]2 [amount in words], for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted or will submit a written Bid to the Purchaser dated the ___ day of ______, 20__, for the supply of [name of Contract] (hereinafter called the “Bid”).

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

(a) has withdrawn its Bid during the period of bid validity set forth in the Principal’s Letter of Bid (“the Bid Validity Period”), or any extension thereto provided by the Principal; or

(b) having been notified of the acceptance of its Bid by the Purchaser during the Bid Validity Period or any extension thereto provided by the Principal; (i) failed to execute the contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to Bidders (“ITB”) of the Purchaser’s bidding document.

then the Surety undertakes to immediately pay to the Purchaser up to the above amount upon receipt of the Purchaser’s first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiration of the Bid Validity Period set forth in the Principal’s Letter of Bid or any extension thereto provided by the Principal.

IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this ___ day of ____________ 20__.

2 The amount of the Bond shall be denominated in the currency of the Purchaser’s country or the equivalent amount in a freely convertible currency.
Principal: _______________________
    Corporate Seal (where appropriate)

    (Signature)
    (Printed name and title)

Surety: ______________________________

    (Signature)
    (Printed name and title)
Form of Bid-Securing Declaration (Not used)

[The Bidder shall fill in this Form in accordance with the instructions indicated.]

Date: [date (as day, month and year)]
Bid No.: [number of bidding process]

To: [complete name of Purchaser]

We, the undersigned, declare that:

We understand that, according to your conditions, bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with the Purchaser for the period of time of [number of months or years] starting on [date], if we are in breach of our obligation(s) under the bid conditions, because we:

(a) have withdrawn our Bid during the period of bid validity specified in the Letter of Bid; or

(b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract; or (ii) fail or refuse to furnish the Performance Security, if required, in accordance with the ITB.

We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of our Bid.

Name of the Bidder*______________________________

Name of the person duly authorized to sign the Bid on behalf of the Bidder**__________

Title of the person signing the Bid______________________________________________________

Signature of the person named above______________________________________________________

Date signed ________________________________ day of ___________________, _____

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder

**: Person signing the Bid shall have the power of attorney given by the Bidder attached to the Bid

[Note: In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all members to the Joint Venture that submits the bid.]
Manufacturer’s Authorization

[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the BDS.]

Date: [insert date (as day, month and year) of Bid Submission]
NCB No.: BB(G)IT-3 [NDC]

To:
Project Director
Financial Sector Support Project
Main Building, Head Office
Bangladesh Bank,
Motijheel C/A, Dhaka

WHEREAS

We [insert complete name of Manufacturer], who are official manufacturers of [insert type of goods manufactured], having factories at [insert full address of Manufacturer’s factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]

Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title: [insert title]

Dated on ____________ day of __________________, _______ [insert date of signing]
Section V. Eligible Countries

Eligibility for the Provision of Goods, Works and Non Consulting Services in Bank-Financed Procurement

In reference to ITB 4.7 and 5.1, for the information of the Bidders, at the present time firms, goods and services from the following countries are excluded from this bidding process:

Under ITB 4.7(a) and 5.1:  *Israel*

Under ITB 4.7(b) and 5.1:  *Israel*
Section VI. Bank Policy - Corrupt and Fraudulent Practices


“Fraud and Corruption:

1.16 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, Bidders and their agents (whether declared or not), sub-Bidders, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

   (i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

   (ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

   (iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

   (iv) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

   (v) "obstructive practice" is:

---

3 In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

4 For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

5 For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

6 For the purpose of this sub-paragraph, “parties” refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.

7 For the purpose of this sub-paragraph, “party” refers to a participant in the procurement process or contract execution.
(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under paragraph 1.16(e) below.

(b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, sub-Bidders, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

(d) will sanction a firm or individual, at any time, in accordance with the prevailing Bank’s sanctions procedures, including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated

(e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and Bidders, and their sub-Bidders, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the

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8 A firm or individual may be declared ineligible to be awarded a Bank financed contract upon: (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

9 A nominated sub-Bidder, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.
submission of bids and contract performance, and to have them audited by auditors appointed by the Bank.”
PART 2 – Supply Requirements
Section VII. Schedule of Requirements

Contents

1. List of Goods/Service and Delivery/Completion Schedule ............................................. 67
2. Specifications Submission and Compliance Sheet .......................................................... 83
3. Technical Specifications .................................................................................................. 101
4. Drawings ...................................................................................................................... 129
5. Inspections and Tests ................................................................................................... 130
Notes for Preparing the Schedule of Requirements

The Schedule of Requirements shall be included in the bidding documents by the Purchaser, and shall cover, at a minimum, a description of the goods and services to be supplied and the delivery schedule.

The objective of the Schedule of Requirements is to provide sufficient information to enable bidders to prepare their bids efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Section IV. In addition, the Schedule of Requirements, together with the Price Schedule, should serve as a basis in the event of quantity variation at the time of award of contract pursuant to ITB 41.

The date or period for delivery should be carefully specified, taking into account (a) the implications of delivery terms stipulated in the Instructions to Bidders pursuant to the *INCOTERMS* rules (i.e., EXW, or CIP, FOB, FCA terms—that “delivery” takes place when goods are delivered to the carriers), and (b) the date prescribed herein from which the Purchaser’s delivery obligations start (i.e., notice of award, contract signature, opening or confirmation of the letter of credit).
# 1. List of Goods/Service and Delivery/Completion Schedule

<table>
<thead>
<tr>
<th>Line Item No.</th>
<th>Description of Goods</th>
<th>Qty</th>
<th>Physical unit</th>
<th>Final (Project Site) Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical Goods and Works:</strong></td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>Providing following <strong>tubular pole</strong> fabricated with 4.76mm (3/16”) thick M.S sheet having different sections with 152.40mm long M.S. reducing collar joint complete with M.S base plate, top cover, necessary welding &amp; duly painted with two coats of superior quality aluminum silver paint over two prime coats of red oxide etc. as required: - Total 12192mm (40'-0&quot;) long having 152.4mm (6&quot;) dia 9144 mm (30') at the bottom, and 101.60mm (4&quot;) dia 3048mm (10') at the top with 609 mm x 609mm x 6.35mm (2'-0&quot; x 2'-0&quot;x 0'-0. 25&quot;) size steel base plate.</td>
<td>4</td>
<td>each</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
<tr>
<td>2</td>
<td>Erection of following tubular pole up to 1828.80mm (6’) depth by placing the pole base on one layer of 1st class brick flat soling over 76.2mm (3”) sand bedding and making 1:2:4 C.C. work around the pole 304.8mm (1'-0&quot;) below GL &amp; 304.8mm (1ft) above GL. 12.5mm (1/2”) thick cement plaster with neat cement finishing over concrete surface including proper curing, excavation &amp; refilling and ramming the loose soil etc. as required. 12192mm (40’) long MS/GI /Spun P.C pole with 457mm x 457mm (1.5’x1.5’) cc work</td>
<td>4</td>
<td>each</td>
<td></td>
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<tr>
<td>3</td>
<td>Providing &amp; fixing U-channel iron cross-arm of size 38mm x 76mm x 38mm x 6.35mm. (1.5” x 3” x 1.5” x 0.25”) on single pole /H-pole with the help of necessary clamps, nuts, bolts etc. including making required no. of holes on the cross-arm for fixing of drop out fuse, lightning arrester including two coats of superior quality aluminum painting over required prime coat of anti corrosive red-oxide painting complete as required &amp; <strong>as per instruction of the Engineer-in-charge.</strong></td>
<td>4</td>
<td>each</td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>Supply of outdoor type 11KV, 50Hz, 100A. (10KA), 75 KV <strong>BIL lightning arrester</strong> complete with mounting accessories etc. manufactured by GEM Co. Ltd, Bangladesh /ENERGYPAC or equivalent product of USA/EU Countries (3 Nos. in a set).</td>
<td>1</td>
<td>Per set</td>
<td></td>
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<tr>
<td>5</td>
<td>Supply of outdoor type 11KV, 50Hz, 5KA (20KA) <strong>dropout fuse</strong> complete with mounting accessories etc. manufactured by GEM Co. Ltd, Bangladesh /ENERGYPAC or equivalent product of USA/EU Countries (3 Nos. in a set).</td>
<td>1</td>
<td>Per set</td>
<td></td>
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<tr>
<td>6</td>
<td>Installation of HT drop out fuse/ lightning arrester/ disconnection switch on prepared U-channel cross-arm on single /H-pole with necessary fixing materials complete <strong>as per instruction of the Engineer-in-charge.</strong></td>
<td>2</td>
<td>Per set</td>
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<tr>
<td>7</td>
<td>Supply &amp; fixing of <strong>heat shrink termination kit</strong> outdoor/ indoor use complete with DIN lugs earth connection hardware &amp; cable preparation kit (In-door &amp; outdoor) at the point of cable termination for</td>
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<tr>
<td>Line Item N°</td>
<td>Description of Goods</td>
<td>Qty</td>
<td>Physical unit</td>
<td>Final (Project Site) Destination as specified in BDS</td>
<td>Required Completion Time for Work</td>
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<tr>
<td>7(a)</td>
<td>for indoor use 3 x 185 mm² 11KV 3-core PVC insulated &amp; PVC sheathed &amp; armoured / non-armoured cable of the following sizes (Made in GERMANY/ USA/UK/ FRANCE/ JAPAN/ ITALY/ SWEDEN/ SWITZERLAND or equivalent accepted/approved by the Engineer.)</td>
<td>6</td>
<td>per set</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
<tr>
<td>7(b)</td>
<td>for outdoor use 3 x 185 mm²</td>
<td>2</td>
<td>per set</td>
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<td>8</td>
<td>11KV AUTOMATIC VOLTAGE REGULATOR:</td>
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<td></td>
<td>Supply of Type Tested &amp; factory assembled (must having ISO-9001:2008) 11KV Automatic Voltage Regulators according to NEMA and ANSI C57.12.31 or equivalent standards and shall meet latest requirements of BPDB/local power supply authority.</td>
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<td>Automatic Voltage Regulators shall be type tested 200A at 6.35KV Single Phase in sealed tank design with digital Control panel, Ground clamps &amp; standard accessories and as per following technical data/specification. (1set = 3nos).</td>
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<td>11KV AVR shall be from USA/ EU/Japan or equivalent with relevant authorization, technical offer, technical catalogue, warrantee &amp; guarantee, Test Certificate etc from manufacturer.</td>
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<td>Rated voltage: 11KV, 3-phase/6.35KV, 1-phase</td>
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<td>Rated frequency: 50Hz</td>
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<td>Rated current: 200Amps at 6.35KV</td>
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<td></td>
<td>Basic Insulation Level (BIL) : 95KV</td>
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<td></td>
<td>Rated range of regulation: +/-10% in 32steps of 0.625% each</td>
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<td>Sealed tank design: Yes</td>
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<td>Cooling: Self</td>
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<td>Surge Protective device: 10KA, 9KV</td>
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<td>Temperature rise: Up to 65 degree C without increase the oxidation rate of Oil.</td>
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<td>Provision for 240VAC, 50Hz test input voltage for testing of the voltage regulator with external power supply: Yes</td>
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<td>Micro-processor based control panel: Yes</td>
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<td>Non-PCB oil for the voltage regulator: Yes</td>
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<td>Accuracy class of regulator control panel: Class-1</td>
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<td>Installation : Indoor/outdoor</td>
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<td></td>
<td>The following spares shall be supplied with AVR:</td>
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<tr>
<td></td>
<td>6nos. Fuses</td>
<td></td>
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<td></td>
<td>2nos. Position Indicator Glass</td>
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<td></td>
<td>2nos. Oil Sight Gauge Glass</td>
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<tr>
<td></td>
<td>1no. Digital control panel</td>
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<tr>
<td>9</td>
<td>Installation, testing and commissioning of following 6.35KV, 50Hz single phase oil immersed Automatic Voltage Regulator (1set=3nos single phase) on prepared platform on pole /c.c. foundation</td>
<td>1</td>
<td>per set</td>
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</tbody>
</table>
with the help of necessary tools & plants, skilled labour & technician as per direction of the Engineer-in-charge. Bidder may visit the site before submitting bid.

<table>
<thead>
<tr>
<th>Line Item No</th>
<th>Description of Goods</th>
<th>Qty</th>
<th>Physic al unit</th>
<th>Final (Project Site) Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Supply of off-load 11KV T-Pole, 600Amps single phase, self sequencing 2 position Bypass switch suitable for use with 11KV AVR Maximum design voltage rating: 15.5KV, Impulse withstand voltage: 110KV. Continuous current rating: 400A complete with all standard accessories manufactured and tested as per NEMA/IEC/VDE/BS/JIS standards accepted/approved by the Engineer.</td>
<td>3</td>
<td>Each</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
<tr>
<td>11</td>
<td>Installation of 11KV bypass switch in Pre supplied and install on ground with required basement as per site condition in/c all assorted materials. Bidder may visit the site before submitting bid.</td>
<td>3</td>
<td>Each</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 12           | **High Tension Switchgear:**  
Supply of type tested & factory assembled (must having ISO-9001:2008) confirming to IEC 298/694 High Voltage (11KV) 1 (One) Set (1 set = 3Nos; 1 incoming & 2 outgoing) Switchgear of sheet steel clad (14SWG) dust & vermin proof, free-standing, floor mounting completely with powder coated painting 11KV, 25KA, 50Hz, 3-phase indoor type high tension switchgear panel. The switchgear shall be inclusive of withdrawable type VCB, CT, PT, relay, ammeter, voltmeter, energy meter, 800Amps hard-drawn electrolytic copper busbars, interlocked earth switch, internal wiring etc all equipment and accessories complete as per standard and instruction of Engineer in charge. The switchgear must comply with the requirement of BPDB and relevant local authority. All the major components of HT switchgear shall be from reputed manufacturer of Siemens /ABB / Eaton / Schneider or its equivalent & approved quality in accordance with UL/NEMA/ IEC/ VDE/ BS/ JIS standards.  
**HT Incoming Feeder:**  
1-630Amps, 11KV, 50Hz Triple Pole, Earth Switch rated at 2.1KA at 3-sec to be interlocked with VCB.  
1-630A, 11KV, 25KA (3-Sec), rated short time current, 50Hz, electromagnetically operated/spring charged stored energy mechanism totally withdrawable type VCB, manual closing/tripping device for emergency operation, maximum service voltage 12KV, short circuit breaking capacity 25KA(3-sec), 24-DC power pack for shunt tripping coil, ON/OFF/Trip indicator. 2-11KV, cast resin insulated double pole potential transformer having ratio 11000/110V (open delta), burden 50VA, class 0.5 for metering & protection.  
1- TP MCB for PT secondary protection.  
3-11KV, cast resin insulated dry type double core current transformer having ratio 150/5/5A, burden 10-15VA, for metering first core of class 0.5MS and second core protection of class 10P10.  
1-Ammeter having scale (0-150)A with 4-way selector switch.  
1-Voltmeter having scale (0-15)KV with 7-way selector switch.  
1-3 phase 3 wire, two part time of the solid state micro computer operated digital KWH meter with indicating PEAK & OFF PEAK energy with maximum demand indicator KW with indicating time of 30minutes.  
1- Synchronous time switch for double tariff operation of KWH meter.  
1-Triple pole solid state micro-processor operated self powered IDMT relay with 2(two) over current         |
### Description of Goods

(For detailed please see technical specification in section-VII(3))

<table>
<thead>
<tr>
<th>Line Item No</th>
<th>Description of Goods</th>
<th>Qty</th>
<th>Final (Project Site) Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>instantaneous element &amp; short circuit and one earth fault protection element with standard setting. Indicating lamp ON/OFF/TRIP.3 -indicator lamps for presence of the phase (RYB) Panel heater. 2Nos. <strong>HT Outgoing (For 2Nos. 1250KVA Transformer):</strong> 1-630Amps, 11KV, 50Hz Triple Pole, Earth Switch rated at 2.1KA at 3-sec to be interlocked with VCB. 1-630A, 11KV, 25KA (3-Sec), rated short time current, 50Hz, electromagnetically operated/spring charged stored energy mechanism totally withdrawable type VCB, manual closing/tripping device for emergency operation, maximum service voltage 12KV, short circuit breaking capacity 25KA(3-sec), 24-DC power pack for shunt tripping coil, ON/OFF/Trip indicator. 2-11KV, cast resin insulated double pole potential transformer having ratio 11000/110V (open delta), burden 50VA, class 0.5 for metering &amp; protection. 1- TP MCB for PT secondary protection. 3-11KV, cast resin insulated dry type double core current transformer having ratio 120/5/5A, burden 10-15VA, for metering first core of class 0.5M5 and second core protection of class 10P10. 1-Ammeter having scale (0-120)A with 4-way selector switch. 1-Voltmeter having scale (0-15)KV with 7-way selector switch. 1-Triple pole solid state micro-processor operated self powered IDMT relay with 2(two) over current instantaneous element &amp; short circuit and one earth fault protection element with standard setting. Indicating lamp ON/OFF/TRIP. 3 -indicator lamps for presence of the phase (RYB) Panel heater.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Installations, testing and commissioning of following (as describe on HT SWITCHGEAR Item) 11 KV, 50 Hz, 3-phase, indoor type HT switchgear on prepared foundation with the help of necessary tools, plants, skilled labour &amp; technician as per direction of the Engineer-in-charge. <strong>With withdrawable type Vacuum Circuit breaker Bidder may visit the site before submitting bid with their own cost.</strong></td>
<td>1</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
<tr>
<td>14(a)</td>
<td><strong>THREE PHASE DRY TYPE TRANSFORMER with Enclosure :</strong> Supply of following dry type cast resin, forced/natural air cooled, type tested, 3-phase, 50Hz, 11KV/0.415 KV &amp; 0.24 KV indoor type distribution transformer from internationally recognized manufacturer (ISO9001 certified) conformity to IEC 60076/11 standard. Transformer of DYn11 vector group having percentage impedance 4-6%, basic impulse insulation level 75 KV, HV &amp; LV bushings, manual 5 position standard tap changer, complete with two windings of high conductivity aluminum foil with insulation material in class H, earthing terminals, temperature sensor with thermometer, thermostat controlled blower fan (if required), lifting lugs, data plate etc. complete as required with maximum 100 degree C temperature rise and suitable for operation at 45 degree C ambient temperature. Transformer manufactured &amp; tested in accordance with relevant NEMA/UL/IEC/VDE/BS/JIS standards and as per approval/acceptance by the Engineer. (Country of origin: USA/ Japan/ EU Countries or equivalent) accepted/approved by the Engineer.</td>
<td>2</td>
<td>Each</td>
<td></td>
</tr>
</tbody>
</table>

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### Section VII. Schedule of Requirements

#### Line Item N° **Description of Goods**  
(For detailed please see technical specification in section-VII(3))  

<table>
<thead>
<tr>
<th>Qty</th>
<th>Physical unit</th>
<th>Final (Project Site) Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
</tbody>
</table>

- **14(b)** Installation, testing and commissioning of following 11KV/415KV transformers on prepared platform on pole /c.c. foundation with the help of necessary tools & plants, skilled labour & technician as per direction of the Engineer-in-charge.  
  2x1250KVA 3 phase transformer on C.C. pad. **Bidder may visit the site before submitting bid with their own cost.**

- **15** **LT Panel:**

  - **15(a)** Low Tension SWITCHGEAR:  
    Supply of following type tested (according to IEC-439-1/2), 415V, 3-phase, 50Hz, indoor type Low Tension(LT) switch-gear from recognized manufacturer(ISO9001 certified) conformity to relevant IEC standard of sheet steel clad (14 SWG) dust & vermin proof, free-standing, floor mounting, epoxy resin powder coat painted cabinet (25% spare space must be available in Cabinet to install spare circuit breaker excluding following) as per accepted/approved by the Engineer.  
    LT Switchgear shall complete with digital voltmeter & ammeter both with multifunction selection, indicating lamps for ON, OFF & Trip. 1.2A/sq.mm hard drawn electrolytic copper busbar. All the major components shall be manufactured from ABB / Siemens /Eaton / Schneider or equivalent according to relevant UL/NEMA/VDE/IEC/JIS/BS Standards and shall have type test certificate according to relevant IEC Standard)  
    **INCOMING:**  
    1 Set- 415V, 2500 amp. TP & NE hard drawn electrolytic copper busbar.  
    1 No-415V, 2000 Amps (80KA), TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection & shunt releases, ON-OFF & Trip indicating auxiliary contacts & suitable for connection as required size and no of cable per phase & complete in all respect as per technical specification & shall have interlocking facilities with Bus-Coupler.  
    3 Nos. - 415V, 2000/5 ratio current transformer with suitable accuracy & burden.  
    1-Multi-function meter with RS485 port  
    1-Set Push button “ON & OFF”.  
    3nos. Indicating lamps ON/OFF/TRIP.  
    3nos. Phase Indicating lamps Red/Blue/Yellow.  
    **OUTGOING:**  
    1 No.-415V, 1250A (65KA) TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection & shunt releases, ON-OFF & Trip indicating auxiliary contacts & suitable for connection as required size and no of cable per phase & complete in all respect as per technical specification.  
    3 Nos. - 415V, 1250/5 ratio current transformer with suitable accuracy & burden.
## Section VII Schedule of Requirements

<table>
<thead>
<tr>
<th>Line Item No.</th>
<th>Description of Goods</th>
<th>Qty</th>
<th>Physical unit</th>
<th>Final (Project Site) Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Multi-function meter with RS485 port</td>
<td>1</td>
<td>Each</td>
<td>BBTA, Mirpur</td>
<td>09 (Nine) months</td>
</tr>
<tr>
<td>2</td>
<td>Set Push button “ON &amp; OFF”.</td>
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<tr>
<td>3</td>
<td>Indicating lamps ON/OFF/TRIP.</td>
<td>3</td>
<td></td>
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<tr>
<td>4</td>
<td>Phase Indicating lamps Red/Blue/Yellow.</td>
<td>3</td>
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<tr>
<td>5</td>
<td>1 No. 415V, 800A (65KA) TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection &amp; shunt releases, ON-OFF &amp; Trip indicating auxiliary contacts &amp; suitable for connection as required size and no of cable per phase &amp; complete in all respect as per technical specification.</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td>3 Nos. 415V, 800/5 ratio current transformer with suitable accuracy &amp; burden.</td>
<td>3</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>Multi-function meter with RS485 port</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>Set Push button “ON &amp; OFF”.</td>
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<tr>
<td>9</td>
<td>Indicating lamps ON/OFF/TRIP.</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>Phase Indicating lamps Red/Blue/Yellow.</td>
<td>3</td>
<td></td>
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<tr>
<td>11</td>
<td>1 No. 415V, 500A (35KA) TP MCCB with electronic microprocessor based, built in adjustable overload &amp; adjustable short circuit protection, ON-OFF &amp; Trip indicating auxiliary contacts, rotary handle with pad lock facilities &amp; suitable for connection as required size and no of cable &amp; complete in all respect as per technical specification</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>12</td>
<td>2 Nos. 415V, 200A (25KA) adjustable type TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release.</td>
<td>2</td>
<td></td>
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<tr>
<td>13</td>
<td>1 No. 415V, 80A (16KA) TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release.</td>
<td>1</td>
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<tr>
<td>14</td>
<td>1 No. 415V, 30/32A (16KA) TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release.</td>
<td>1</td>
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<tr>
<td>15</td>
<td>BUS Coupler: Supply of 1X2000A, 65KA, TP motorized ACB with micro processor based selectively operating built-in-adjustable overload, adjustable short circuit protection; shunt release, ON-OFF &amp; Trip indicating auxiliary contacts &amp; having interlocking facilities (electrical/mechanical) with both the Main Incomers of LT panels. Normally Bus-coupler shall remain OPEN unless other-wise close for special purpose.</td>
<td>1</td>
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<td></td>
<td>The cost shall be inclusive of this item for motor operator relays and shunt tripping coils &amp; closing coil relays of both ACB (require for mechanical &amp; electrical interlock), copper dropper links &amp; others accessories for inter-connection with Main ACB of LT panels, Bus-coupler as per specification, Standard &amp; layout plan &amp; direction of the Engineer-in-charge.</td>
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<tr>
<td>16</td>
<td>Push button “ON, OFF”.</td>
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<tr>
<td>17</td>
<td>Phase Indicators lamps Red/Blue/Yellow.</td>
<td>3</td>
<td></td>
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</tr>
</tbody>
</table>
### Description of Goods

(For detailed please see technical specification in section-VII(3))

<table>
<thead>
<tr>
<th>Item N°</th>
<th>Description of Goods</th>
<th>Qty</th>
<th>Physical unit</th>
<th>Final (Project) Site Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
</table>
| 15(c)   | **INCOMING:**  
1 Set - 415V, 2500 amp. TP & NE hard drawn electrolytic copper busbar  
1 No - 415V, 2000 Amps (80KA), TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection & shunt releases, ON-OFF & Trip indicating auxiliary contacts & suitable for connection as required size and no of cable per phase & complete in all respect as per technical specification & shall have interlocking facilities with Bus-Coupler.  
3 Nos. - 415V, 2000/5 ratio current transformer with suitable accuracy & burden; 1-Multi-function meter with RS485 port ; 1-Set Push button “ON & OFF”; 3nos. Indicating lamps ON/OFF/TRIP.  
3nos. Phase Indicating lamps Red/Blue/Yellow.  
**OUTGOING:**  
1 No - 415V, 1250A (65KA) TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection & shunt releases, ON-OFF & Trip indicating auxiliary contacts & suitable for connection as required size and no of cable per phase & complete in all respect as per technical specification.  
3 Nos. - 415V, 1250/5 ratio current transformer with suitable accuracy & burden.  
1-Multi-function meter with RS485 port ; 1-Set Push button “ON & OFF”; 3nos. Indicating lamps ON/OFF/TRIP; 3nos. Phase Indicating lamps Red/Blue/Yellow. (For PFI control).  
2 Nos. - 415V, 800A (65KA). TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection & shunt releases, ON-OFF & Trip indicating auxiliary contacts & suitable for connection as required size and no of cable per phase & complete in all respect as per technical specification.  
3 Nos. - 415V, 800/5 ratio current transformer with suitable accuracy & burden; 1-Multi-function meter with RS485 port ; 1-Set Push button “ON & OFF”; 3nos. Indicating lamps ON/OFF/TRIP; 3nos. Phase Indicating lamps Red/Blue/Yellow.  
1 No - 415V, 600A (35KA) TP MCCB with electronic microprocessor based, built in adjustable overload & adjustable short circuit protection, ON-OFF & Trip indicating auxiliary contacts, rotary handle with pad lock facilities & suitable for connection as required size and no of cable & complete in all respect as per technical specification.  
1 No - 415V, 500A (35KA) TP MCCB with electronic microprocessor based, built in adjustable overload & adjustable short circuit protection, ON-OFF & Trip indicating auxiliary contacts, rotary handle with pad lock facilities & suitable for connection as required size and no of cable & complete in all respect as per technical specification.  
1 No. - 415V, 400A (35KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.  
2 Nos. - 415V, 300/320A (35KA) adjustable type TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.  
1 No. - 415V, 80A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release.  
1 No. - 415V, 30/32A (16KA) TPMCCB with thermal overload & instantaneous electro-magnetic short circuit release. | 1   | Each           | BBTA, Mirpur | 09(Nine) months                                   |
<table>
<thead>
<tr>
<th>Line Item N°</th>
<th>Description of Goods</th>
<th>Qty</th>
<th>Physical unit</th>
<th>Final (Project Site) Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
</table>
| 16          | **PFI Capacity- 750 KVAR**  
**Automatic PFI Plants:** Supply of following type tested (according to IEC-439-1/2, 415 V, 3-phase, 50 Hz, indoor type power factor improvement panel from recognized manufacturer (ISO9001 certified) conformity to relevant IEC standard of sheet steel clad (14 SWG) dust & vermin proof, free-standing, floor mounting, epoxy resin powder coat painted cabinet as per accepted/approved by the Engineer. PFI Panel shall complete with TP busbars and earth block, micro processor controlled auto power factor correction relay with digital PF reading display, capacitor bank, contactor, fuse, ON-OFF indicators for every stage of capacitor bank (except directly connected one) etc. Major components shall be manufactured from ABB/ Siemens / Eaton / Schneider / Moeller / Frako or equivalent according to relevant NEMA/VDE/IEC/JIS/BS Standards and shall have type test certificate according to relevant IEC Standards.**  
3 Nos. - 415V, 1500A hard drawn electrolytic copper busbar.  
1 No. - 415V, 15KVAR (as per required for transformer specification), 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through Suitable capacity TPMCCB and fuse.  
1 No. - 415V, 10KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.  
1 No. - 415V, 15KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.  
1 No. - 415V, 20KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.  
1 No. - 415V, 40KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.  
3 Nos. - 415V, 50KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.  
1 No. - 415V, 32Amps, 50Hz auto TP magnetic contactor with AC3 duty.  
2 Nos. - 415V, 40 Amps, 50Hz auto TP magnetic contactor with AC3 duty.  
1 No. - 415V, 80Amps, 50Hz auto TP magnetic contactor with AC3 duty.  
3 No. - 415V, 100 Amps, 50Hz auto TP magnetic contactor with AC3 duty.  
5 Nos. - 415V, 180 Amps, 50Hz auto TP magnetic contactor with AC3 duty.  
1 No. - 415V, 30Amps.TPMCCB  
1 No. - 415V, 32Amps.TPMCCB  
1 No. - 415V, 50Amps.TPMCCB  
1 No. - 415V, 80Amps.TPMCCB  
3 Nos. - 415V, 100Amps.TPMCCB  
5 Nos. - 415V, 200Amps.TPMCCB  
17 | **Installation, testing and commissioning of 415V, 3-phase, 50 Hz indoor type LT switchgear/P.F.I. plant** suitable for following capacity transformer on prepared c.c. foundation with the help of necessary tools & plants, skilled labour & technician as per direction of the Engineer-in-charge. **Bidder may visit the site before submitting bid with their own cost.** | 5   | Per job | BBTA, Mirpur | 09 (Nine) months |

*Note: All items are delivered to the Final (Project Site) Destination specified in BDS. The completion time for work refers to the time frame required to complete the installation, testing, and commissioning.*
<table>
<thead>
<tr>
<th>Line Item N°</th>
<th>Description of Goods</th>
<th>Qty</th>
<th>Physical unit</th>
<th>Final (Project Site) Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
</table>
| 18          | **Generator:**
Supply of 400 / 230V, 3-phase, 50Hz. air/water cooled, floor mounted, indoor type following continuous capacity (Prime Power) electric **500KVA generating set** (with ATS & with sound attenuated acoustically treated canopy (maximum sound level: 75 dBA at 7m distance). suitable for tropicalized country complete with four stroke, 1500 rpm, diesel engine with all standard accessories, viz. 12/24 volt DC battery & auto battery charger with ammeter, radiator assembly, oil & fuel pump, auto speed governor, air cleaner, fuel & oil tank, fuel level & oil pressure gauge, RPM & hour meter, exhaust silencer, vibration isolator, mounting steel base frame etc including a safety & protection device viz. auto shut off with indicators for overload, over & under voltage high temperature, low oil pressure, over speed, low fuel level etc. coupled with brush less, self excited alternator having control panel with auto voltage regulator, voltmeter & ammeter with selector switch, frequency meter, TPMCCB of required rating for overload & instantaneous short circuit release, auto start & auto change over to load within 10 sec during normal power failure and auto stop & auto change over to normal supply within 5 minutes after restoration of normal power supply, indicator for 3 Phase ON-OFF - Trip etc including maintenance tools, 3 sets of detailed technical catalogues & maintenance manual. Manufactured, assembled and tested in accordance with NEMA / IEC / VDE / JIS standards The Bidder should free Operation and Maintenance works engaging 01 skilled technician & also supply of necessary spares and consumables such as Oil filter, Air filter, Fuel filter, coolant without Engine oil and Fuel within 12 (Twelve) months (24/7) warranty obligations from the date of official hand over of the brand new 500KVA(prime power) Diesel Power Generator. Ensuring after sale service with spare parts within the life time of the generator sets. The generating set shall be assembled & tested in USA/Japan/EU countries. The major components like engine, alternator, ATS, canopy shall also be manufactured and tested in USA/ Japan/ EU Countries & accepted/approved by the Engineer. | 2   | Each          | BBTA, Mirpur                                      | 08(Eight) months                  |
<p>| 19          | Installation, testing &amp; commissioning of following electric generator on prepared cc pad with the help of necessary T &amp; P, skilled labour, technician. Engineer including 8 hrs /7 day trial run operation by skilled operator with supply of necessary fuel &amp; lubricant as per manufacturers instruction manual and in accordance with relevant IEC/NEMA/VDE/JIS standards so that vibration transfer rate to foundation shall be almost zero. 500 KVA manual/auto/auto with soundproof acoustically treated canopy generating set. <strong>Bidder may visit the site before submitting bid.</strong> | 2   | Each          | BBTA, Mirpur                                      | 09(Nine) Months                   |
| 20          | Trench cutting with following dimension through RCC floor /Road cutting of at Bangladesh Bank Training Academy premises (for laying HT/LT cable through pvc pipe) carefully using electric hammer, drill machine or MS rod cutter with protecting any damages existing floor and blinding the prepared trench with concrete (1:2:4) Placing necessary no of 12mm MS rod with welding, shuttering, centering and curing/road carpeting etc engaging expert mason/ technician all complete works as per direction of the Engineer in charge. <strong>Bidder may visit the site before submitting the tender.</strong> | 110 | meter         | BBTA, Mirpur                                      | 09(Nine) Months                   |</p>
<table>
<thead>
<tr>
<th>Line Item No</th>
<th>Description of Goods</th>
<th>Qty</th>
<th>Physical Unit</th>
<th>Final (Project Site) Destination as specified in BDS</th>
<th>Required Completion Time for Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Providing &amp; laying of following sizes HT (11KV) PVC insulated, sheathed, screened &amp; armoured cable (NYSEYFGbY)/HT (11KV) armoured XLPE cable in prepared trench. All electrical contacts shall be of brass/copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC/BDS/ BS/ VDE standards. The work shall be carried out as per direction/approval/acceptance of the Engineer. 125mm PVC pipe having wall thickness of 3mm or Surface with necessary supports With 3C x 185 sq.mm (NYSEYFGbY) HT (11KV) Cables through prepared trench through manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
<td>240</td>
<td>meter</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) Ömonths</td>
</tr>
<tr>
<td>22</td>
<td>CABLE-RACE WAY (Ladder/tray) Supply, fabrication, fitting, fixing of indoor/outdoor cable tray/ladder made of 16SWG galvanized sheet steel/angle bar, flat bar of approved quality of following sizes complete with necessary hangers, supports, cover junction box, hangers, clamps, bends, nuts, bolts, washer &amp; all other accessories as per drawing, specifications &amp; direction of the Engineer-in-charge. 500mm x 75mm</td>
<td>140</td>
<td>meter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Providing &amp; laying of the following additional PVC insulated &amp; sheathed cable (NYY) / XLPE insulated &amp; PVC sheathed cable (2XY) with PVC insulated green/white coloured ECC wire (BYA) connecting at both ends, through PVC pipe with necessary accessories in prepared a common trench In kutcha ground/pucca floor/ through the Cable tray etc. All electrical contacts shall be of brass/copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC/BDS/ BS/ VDE standards and as per detailed specification mentioned. The work shall be carried out as per direction/approval/acceptance of the Engineer.</td>
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<tr>
<td>23(a)</td>
<td>1C-4x400sq.mm (NYY) with 185sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 125mm having wall thickness of 3mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
<td>150</td>
<td>Per meter</td>
<td></td>
<td></td>
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<tr>
<td>23(b)</td>
<td>1C-4x300sq.mm (NYY) with 150sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 125mm having wall thickness of 3mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
<td>900</td>
<td>Per meter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23(c)</td>
<td>1C-4x240sq.mm (NYY) with 120sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 125mm having wall thickness of 3mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
<td>20</td>
<td>Per meter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23(d)</td>
<td>1C-4x185sq.mm (NYY) with 95sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia</td>
<td>60</td>
<td>Per</td>
<td></td>
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<tr>
<td>Line Item No.</td>
<td>Description of Goods</td>
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<tr>
<td></td>
<td>(For detailed please see technical specification in section-VII(3))</td>
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<tr>
<td></td>
<td>Qty</td>
<td>Physical unit</td>
<td>Final (Project Site) Destination as specified in BDS</td>
<td>Required Completion Time for Work</td>
<td></td>
</tr>
<tr>
<td>100mm having wall thickness of 3mm. Cables manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory approved by the Engineer.</td>
<td>meter</td>
<td>BBTA, Mirpur</td>
<td>9(Nine) months</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>23(e)</strong></td>
<td>1C-4x150sq.mm (NYY) with 70sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 100mm having wall thickness of 3mm. Cables manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory approved by the Engineer.</td>
<td>20</td>
<td>Per meter</td>
<td>09(Nine) months</td>
<td></td>
</tr>
<tr>
<td><strong>23(f)</strong></td>
<td>1C-4x70sq.mm (NYY) with 35sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 65mm having wall thickness of 2.5mm. Cables manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory approved by the Engineer.</td>
<td>30</td>
<td>Per meter</td>
<td></td>
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<tr>
<td><strong>23(g)</strong></td>
<td>1C-4x50sq.mm (NYY) with 25sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 65mm having wall thickness of 2.5mm. Cables manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory approved by the Engineer.</td>
<td>40</td>
<td>Per meter</td>
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</tr>
<tr>
<td><strong>23(h)</strong></td>
<td>1C-4x10sq.mm (NYY) with 10sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 40mm having wall thickness of 1.9mm. Cables manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory approved by the Engineer.</td>
<td>50</td>
<td>Per meter</td>
<td></td>
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<tr>
<td><strong>24</strong></td>
<td>Complete MDB/DB: Providing and fixing 500v 3-PHASE BUSBAR system assembled in 18 SWG M.S. board of depth 228mm (9&quot;) duly painted with gray hammer paint on outside and enamel paint in inside surfaces having built in push type locking arrangement including metal bridges of suitable size for fixing of all electrical control devices complete with suitable anchoring arrangement in wall/column and keeping provision for cable inlets and exits as required (only front surface of the board will be considered for measurement) having the following components and specifications in/c arrangement of cable/wire connection, hinged type top cover, locking arrangement, two coats gray hammer painting over anticorrosive coat, rail for TPMCB/SPMCB etc. on prepared board/wall. Board size 18”x14” with 1 Set - 500V, 100 Amp. TP, NE &amp; Earth hard drawn electrolytic copper busbar with mini length of TP, NE is 10” INCOMING : 1Nos. - 415V, 50/60 (10KA) TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release. OUTGOING : 2 Nos. - 500V grade, 30/40A (6KA) TPMCB with thermal overload &amp; instantaneous electro-magnetic short circuit release. 5Nos. - 500V grade, 15/20/30A (6KA) SPMCB with thermal overload &amp; instantaneous electro-magnetic short circuit release.</td>
<td>3</td>
<td>Each</td>
<td></td>
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</tr>
<tr>
<td>Line Item No.</td>
<td>Description of Goods</td>
<td>Qty</td>
<td>Physical unit</td>
<td>Final (Project Site) Destination as specified in BDS</td>
<td>Required Completion Time for Work</td>
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<tr>
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<tr>
<td>25</td>
<td>Magnetic short circuit release. TPMCBS of DORMAN SMITH / MEM / Siemens/ Schneider/ Eaton/ or equivalent accepted/approved by the Engineer.</td>
<td>15</td>
<td>Per set</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
<tr>
<td>26</td>
<td>Earthing the electrical installation with 40mm (1.5&quot;) dia G.I. pipe (Earth electrode) having 6.35mm. dia hole across the pipe at 305 mm. interval securely bonded by soldering with 2 nos. of No2 SWG HDBC earth leads with its protection by 20mm. (3/4&quot;) dia G.I. pipe with No-2 HDBC wire up-to plinth level run at a depth of 609.6mm. (2 ft.) below G.L. up-to main board to be earthed including necessary connecting copper sockets, bolts, nuts, etc. complete for maintaining earth resistance within 1 ohm. Depth of bottom of main electrode at 37338mm. (122.5 ft) from GL &amp; length of electrode 36576mm. (120 ft).</td>
<td>15</td>
<td>Each</td>
<td></td>
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<tr>
<td>27</td>
<td>Construction of Earthing inspection pit inside measurement 600mm x 600mm with 250mm thick brick in cement mortar (1:4) with 100mm thick RCC top slab (1:2:4) with 1% reinforcement 450mm dia water sealed CI man-hole cover with locking arrangement including necessary earth works, site filling and one brick flat soling 75 mm thick (1:3:6) base concrete for making inlet channel &amp; 12mm thick (1:2) cement plaster with neat finishing etc. all complete up to a depth of .75 meter.</td>
<td>100</td>
<td>meter</td>
<td></td>
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</tr>
<tr>
<td>28</td>
<td>Surface channel wiring for the following point looping at the switch board with earth terminal including circuit wiring with 1C-2x2.5sq.mm PVC insulated and sheathed stranded cable (BYM) &amp; 1.5sq.mm green/white colored PVC insulated ECC wire (BYA) through minimum 1mm thick PVC channel complete with 18 SWG GP sheet switch board (preferably concealed) with 3mm thick ebonite sheet cover, circular box, ceiling rose, fixing materials, other accessories etc. as required and mending the damages good. All electrical contacts shall be of brass/copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC/BDS/BS/VDE standards. The work shall be carried out as per direction/approval/acceptance of the Engineer.</td>
<td>45</td>
<td>Each</td>
<td></td>
<td></td>
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<tr>
<td>29</td>
<td>Surface channel wiring with the following PVC insulated and sheathed stranded cable (BYM) &amp; green/white coloured PVC insulated ECC wire (BYA), through minimum 1 mm thick PVC channel complete with fixing materials, other accessories etc. as required including mending the damages good. All electrical contacts shall be of brass/copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC/BDS/BS/VDE standards. The work shall be carried out as per direction/ approval/ acceptance of the Engineer.</td>
<td>250</td>
<td>Each</td>
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<tr>
<td>30(a)</td>
<td>1C-2x2.5sq.mm. (BYM) cable with 2.5sq.m (BYA) ECC wire. Cables manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory</td>
<td>250</td>
<td>Each</td>
<td></td>
<td></td>
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</tbody>
</table>
## Section VII. Schedule of Requirements

<table>
<thead>
<tr>
<th>Line Item No.</th>
<th>Description of Goods</th>
<th>Qty</th>
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<th>Final (Project Site) Destination as specified in BDS</th>
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</tr>
</thead>
<tbody>
<tr>
<td>30(b)</td>
<td>1C-2x6 sq.m. (BYM) cable with 6sq.m (BYA) ECC wire. Cables manufactured by Paradise / BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
<td>100</td>
<td>Each</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
<tr>
<td>31</td>
<td>GANG SWITCH/ SOCKET/ FAN REGULATOR Providing &amp; fixing 250 volts. 5/6 amps. (minimum) concealed type following switch / switch socket manufactured and tested in accordance with relevant IEC/ VDE/NEMA/BS/JIS standards mounted on required size 18 SWG galvanized plain sheet board of 76.2 mm (3&quot;) depth. All electrical contacts shall be of brass/copper Dynamic /MEP/METRO /HAGER/SK/Super Star or equivalent brand accepted/approved by the Engineer.</td>
<td>31(a)</td>
<td>One gang switch</td>
<td>3</td>
<td>Each</td>
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<tr>
<td></td>
<td></td>
<td>31(b)</td>
<td>Two gang switch</td>
<td>6</td>
<td>Each</td>
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<td></td>
<td></td>
<td>31(c)</td>
<td>Three gang switch</td>
<td>7</td>
<td>Each</td>
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<tr>
<td></td>
<td></td>
<td>31(d)</td>
<td>Four gang switch</td>
<td>5</td>
<td>Each</td>
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<td></td>
<td></td>
<td>31(e)</td>
<td>One gang switch &amp; one 5 amps. 2-pin socket combined.</td>
<td>6</td>
<td>Each</td>
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<td></td>
<td></td>
<td>31(f)</td>
<td>Gang type Fan Regulator</td>
<td>8</td>
<td>Each</td>
</tr>
<tr>
<td>32</td>
<td>ENERGY SAVINGS LAMP (CFL) (Illuminate even at low voltage as 110 volts. Built in short circuit &amp; over voltage protection feature &amp; 8000 hrs (min) lifetime.) (230V/250V, 50Hz) (Osram/Philips/Energypac/CBE/Corona/Havells/GE Edision/ Eastern/ Prodipl/ MEP/ Metro/ Harmonics/ Superstar/ Transtec/ Energy or equivalent brand accepted/approved by the Engineer) 23 watt Spiral Screw Type lamp</td>
<td>32</td>
<td></td>
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</tr>
<tr>
<td>33</td>
<td>Providing and fixing of following axial flow A.C capacitor type wall mounted exhaust fan complete with blade, steel frame standard wall louver shutter, PVC insulated connecting wire etc complete as required including cutting wall and mending good the damages as per direction of the Engineer. 16&quot; Exhaust fan, 400/550W, RPM-1420, steel body &amp; blade, Round shape Brand &amp; model: Supper king &amp; DF 4G-4 or approved by engineer in charge.</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>34</td>
<td>Dry Chemical Powder Type Fire Extinguisher: Supply &amp; fixing the following capacities multipurpose ABC&amp;E dry chemical powder stored pressure type with manometer system Fire Extinguisher suitable for repeated use complete with wall bracket, CO Cartridge, easy refilling system etc. as per sample accepted/approved by the Engineer. Country of Origin: China / Malaysia or Equivalent 5 Kg. capacity.</td>
<td>34</td>
<td></td>
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<tr>
<td>35</td>
<td>Carbon-Di-Oxide Type Fire Extinguisher Supply &amp; fixing the following capacities Carbon-di-Oxide type Fire Extinguisher suitable for</td>
<td>35</td>
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<td></td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
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</table>
## Section VII Schedule of Requirements

<table>
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<tr>
<th>Line Item No</th>
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<th>Required Completion Time for Work</th>
</tr>
</thead>
</table>
| 36 | Foam Type Fire Extinguisher  
Supply & fixing the following capacity Foam type **Fire Extinguisher** suitable for repeated use complete with wall bracket etc. as per sample accepted/approved by the Engineer.  
Country of Origin: China / Malaysia or Equivalent  
9 Litre capacity. | 4 | Each | BBTA, Mirpur | 09 (Nine) months |
| 37(a) | Disconnecting and removing the existing sub-station equipment (Transformer, HT & LT, PFI, ATS), old cables and stacking them in a designated places and reconnecting the cables and circuit breaker with newly installed sub-station equipment (Specially with LT panel) and carried out 2 (two) nos 800KVA dry type transformer from BBTA, Mirpur Dhaka to Bangladesh Bank, Rajshahi office with proper handling and performing routine test from local transformer manufacturing factory/laboratory as per approval and direction of the engineer. Bidder may visit the site before submitting tender. **Bidder may visit the site before submitting bid.** | 1 | Per job | Bangladesh Bank, Rajshahi office, Rajshahi | 09 (Nine) months |
| 37(b) | Awarded Bidder shall complete works mention on item No: 18 & 19 (Supply and installation of generator) as per delivery schedule (one month before than other items). Minimum 500KVA power shall supply by those generators with necessary cable connection as required as per site condition during the replacement period of 2x800KVA existing sub-station equipments by installing and commissioning the proposed 2x1250KVA substation. In this case Awarded Bidder shall arrange generator operator, fuel etc for running generator (24x7) to provide minimum 500KVA power for Emergency requirement of BBTA. Bidder include all of cost in this item regarding as mentioned. Or Awarded Bidder may Provide other option to provide minimum 500KVA power round o’clock with their own cost as per approval of engineer in charge. | 1 | Per job | BBTA, Mirpur | 09 (Nine) months |
| 38 | The Bidder shall be responsible for communicating with the local electric supply authority and other authority viz. Chief Inspector of electric license board, Fire service and civil defense authority (if required), directorate of environment (if required) Govt. of Bangladesh, for their **inspection/clearance and additional electric load sanction/increase**. The Bidder shall communicate for additional electric load sanction and other formalities on behalf of the employer till the sub-station is commissioned and handed over. However, all the security deposit money (Govt fee) issued by above mentioned authorities for energy meter and its installation and additional electric load sanction fee for the proposed sub-stations will be directly paid to respective authority by the employer on submission of deposit slip. But the all other **incidental charges** for obtaining HT connection with RMU and Substation installation & commissioning to be included in this item to complete as per local electric supply authority requirement. | 1 | Per job | BBTA, Mirpur | 09 (Nine) months |

**BBTA Civil Works**
### Section VII. Schedule of Requirements

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<tbody>
<tr>
<td>01</td>
<td><strong>Stripping of existing pavement tiles</strong> as specified in the drawing and directed by engineer with the mortar beneath and removal of the derbies to a safe, dry place, cleaning to the original RCC surface etc all complete as per direction of the Engineer.</td>
<td>84.00</td>
<td>sqm</td>
<td></td>
<td></td>
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<tr>
<td>02</td>
<td><strong>Earth work in excavation for transformer base foundation up to 1.5 m depth and maximum 10 m lead in medium stiff clayey soil including layout, providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and marking layout with chalk powder, providing necessary tools and plants, protecting and maintaining the trench dry etc., stacking, cleaning the excavated earth at a safe distance out of the area enclosed by the layout etc. all complete and accepted by the Engineer, subject to submit method statement of carrying out excavation work to the Engineer for approval. However, Engineer’s approval shall not relieve the Bidder of his responsibilities and obligations under the contract.</strong></td>
<td>5.00</td>
<td>sqm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td><strong>One layer of brick flat soling</strong> in foundation or in floor with first class or picked jhama bricks including preparation of bed and filling the interstices with local sand, leveling etc. complete and accepted by the Engineer.**</td>
<td>16.00</td>
<td>sqm</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
<tr>
<td>04</td>
<td><strong>Mass concrete (1:2:4)</strong> in basement floor with cement, sand (F.M. 1.2) and picked jhama chips including breaking chips, screening, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer.** (Cement: CEM-II/A-M)</td>
<td>7.00</td>
<td>sqm</td>
<td></td>
<td></td>
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<tr>
<td>05</td>
<td><strong>Reinforced cement concrete works using wooden shutter, with minimum cement content relates to mix ratio 1:2:4 having minimum f’cr = 24 Mpa, and satisfying a specified compressive strength f’c= 19 Mpa at 28 days on standard cylinders as per standard practice of Code ACI/BNBC/ASTM &amp; cement conforming to BDS EN-197-1- CEM I, 52.5N (52.5MPa) / ASTM-C 150 Type – I, best quality sand [50% quantity of best local sand (F.M. 1.2) and 50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2] and 20 mm down well graded picked jhama brick chips conforming ASTM C-33 including breaking chips and screening, making, placing shutter in position and maintaining true to plumb, making shutter water-tight properly, placing reinforcement in position; mixing in standard mixer machine with hooper fed by standard measuring boxes, casting in forms, compacting by vibrator machine and curing at least for 28 days, removing centering-shuttering after specified time approved; including cost of water, electricity, additional testing charges of materials and cylinders required by engineer, other charges etc. all complete approved and accepted by the Engineer.</strong> (Rate is excluding the cost of reinforcement and its fabrication, placing and binding etc)</td>
<td>9.00</td>
<td>cum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06</td>
<td><strong>Supplying, fabrication and fixing to details as per design: Grade 400 (RB 400 / 400W: complying BDS ISO 6935-2:2006) ribbed or deformed bar produced and marked according to Bangladesh Standard, with minimum yield strength, fy (ReH) = 400 MPa but fy not exceeding 418 MPa for Reinforced Cement Concrete, produced and marked in accordance with BDS ISO 6935-2: 2006 (or standard subsequently released from BSTI) including straightening and cleaning rust, if any, bending and binding in position with supply of G.I. wires, splices or laps what so ever etc. complete in all respects</strong></td>
<td>333.00</td>
<td>kg</td>
<td></td>
<td></td>
</tr>
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<td>Line Item No.</td>
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<tr>
<td>07</td>
<td>Brick works with first class bricks in cement sand (F.M. of sand 1.2) mortar (1:6) in foundation and plinth, filling the joints/interstices fully with mortar, racking out the joints, cleaning and soaking the bricks at least for 24 hours before use and curing at least for 7 days etc. all complete including cost of water, electricity and other charges and accepted by the Engineer. (Cement: CEM-II/A-M)</td>
<td>2.00</td>
<td>cum</td>
<td></td>
<td></td>
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<tr>
<td>08</td>
<td>38mm thick artificial patent stone (1:2:4) flooring with cement, best quality coarse sand (50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2 and 50% best local sand of FM 1.2) and 12 mm down well graded stone chips, laying the concrete in alternate panels, compacting and finishing the top with neat cement and curing at least 7 days in all floors including cost of water, electricity and other charges etc. all complete and accepted by the Engineer. (Cement: CEM-II/A-M)</td>
<td>85.00</td>
<td>sqm</td>
<td>BBTA, Mirpur</td>
<td>09(Nine) months</td>
</tr>
<tr>
<td>09</td>
<td>125mm brick works with first class bricks in cement sand (F.M. 1.2) mortar (1:4) and making bond with connected walls including necessary scaffolding, raking out joints, cleaning and soaking the bricks for at least 24 hours before use and washing of sand curing at least for 7 days in all floors including cost of water, electricity and other charges etc. all complete and accepted by the Engineer. (Cement: CEM-II/A-M) In ground floor</td>
<td>60.00</td>
<td>sqm</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>Minimum 12mm thick cement sand (F.M. 1.2) plaster (1:4) with fresh cement to wall both inner and outer surface, finishing the corner and edges including washing of sand cleaning the surface, scaffolding and curing at least for 7 days, cost of water, electricity and other charges etc. all complete in all respect as per drawing and accepted by the Engineer. (Cement: CEM-II/A-M). Ground floor.</td>
<td>110.00</td>
<td>sqm</td>
<td></td>
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<tr>
<td>11</td>
<td>Manufacturing, supplying, fitting and fixing M.S. grill fencing as per design with outer frames having 38 x 38 x 6 mm M.S. angle and inner members having 6 mm dia M.S. rod placed @ 110 mm c/c diagonally on both direction, welding each cris-cross end of rod with corners of outer frame including cutting rods and size angles to required shapes and size and setting the entire fence with the previously installed tube (angle box) post including thorough and full welding the frame with the angle box posts, painting 2 coats of synthetic enamel paint over a coat of anti-corrosive priming etc. all complete as per drawing and accepted by the Engineer.</td>
<td>26.00</td>
<td>sqm</td>
<td></td>
<td></td>
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<tr>
<td>12</td>
<td>Supplying, fitting and fixing ms grill made of 10 mm dia M.S. rods provided 75 mm c/c in any position both ways as per design with outside frame 25 x 25 x 6 mm M.S. angle including fabricating welding in each point painting 2 coats of synthetic enamel paint over a coat of anti-corrosive priming including cost of electricity, tools and plants, workshop charges, carriage of the same including cutting groves in the R.C.C. or brick work, mending good the damages with C.C. (1:2:4) etc. complete for all floors accepted by the Engineer. [Rate is excluding the cost of painting] (Total weight per sqm should be min 57.68 kg. and add or deduct @ Tk. 35.00 for each kg. excess or less respectively)</td>
<td>26.00</td>
<td>sqm</td>
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<td></td>
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</tbody>
</table>
2. Specifications Submission and Compliance Sheet:

<table>
<thead>
<tr>
<th>Line Item No</th>
<th>Description of Goods</th>
<th>Country of Origin</th>
<th>Brand and Model (when applicable)</th>
<th>Full Technical Specifications and Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Electrical Goods and works:</strong> Providing following <strong>tubular pole</strong> fabricated with 4.76mm (3/16&quot;) thick M.S sheet having different sections with 152.40mm long M.S. reducing collar joint complete with M.S base plate, top cover, necessary welding &amp; duly painted with two coats of superior quality aluminum silver paint over two prime coats of red oxide etc. as required: - Total 12192mm (40'0&quot;) long having 152.4mm (6&quot;) dia 9144 mm (30') at the bottom, and 101.60mm (4&quot;) dia 3048mm (10') at the top with 609 mm x 609mm x 6.35mm (2'-0&quot; x 2'-0&quot;x 0'-0. 25&quot;) size steel base plate.</td>
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<tr>
<td>Line Item N°</td>
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<td>Country of Origin</td>
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<tr>
<td>2</td>
<td>Erection of following tubular pole up to 1828.80mm (6’) depth by placing the pole base on one layer of 1st class brick flat soling over 76.2mm (3”) sand bedding and making 1:2:4 C.C. work around the pole 304.8mm (1’-0”) below GL &amp; 304.8mm (1ft) above GL, 12.5mm (1/2”) thick cement plaster with neat cement finishing over concrete surface including proper curing, excavation &amp; refilling and ramming the loose soil etc. as required. 12192mm (40’) long MS/GI /Spun P.C pole with 457mm x 457mm (1.5’x1.5’) cc work</td>
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<td>3</td>
<td>Providing &amp; fixing U-channel iron cross-arm of size 38mm x 76mm x 38mm x 6.35mm. (1.5” x 3” x 1.5” x 0.25”) on single pole /H-pole with the help of necessary clamps, nuts, bolts etc. including making required no. of holes on the cross-arm for fixing of drop out fuse, lightning arrester including two coats of superior quality aluminum painting over required prime coat of anti corrosive red-oxide painting complete as required &amp; as per instruction of the Engineer-in-charge.</td>
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<tr>
<td>4</td>
<td>Supply of outdoor type 11KV, 50Hz, 100A, (10KA), 75 KV BIL lightning arrester complete with mounting accessories etc. manufactured by GEM Co. Ltd, Bangladesh /ENERGYPAC or equivalent product of USA/EU Countries (3 Nos. in a set).</td>
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<tr>
<td>5</td>
<td>Supply of outdoor type 11KV, 50Hz, 5KA (20KA) dropout fuse complete with mounting accessories etc. manufactured by GEM Co. Ltd, Bangladesh /ENERGYPAC or equivalent product of USA/EU Countries (3 Nos. in a set).</td>
<td></td>
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<tr>
<td>6</td>
<td>Installation of HT drop out fuse/ lightning arrester/ disconnection switch on prepared U-channel cross-arm on single /H-pole with necessary fixing materials complete as per instruction of the Engineer-in-charge.</td>
<td></td>
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<tr>
<td>7</td>
<td>Supply &amp; fixing of heat shrink termination kit outdoor/ indoor use complete with DIN lugs earth connection hardware &amp; cable preparation kit (In-door &amp; outdoor) at the point of cable termination for 11KV 3-core PVC insulated &amp; PVC sheathed &amp; armoured / non-armoured cable of the following sizes (Made in GERMANY/ USA/UK/ FRANCE/ JAPAN/ ITALY/ SWEDEN/ SWITZERLAND or equivalent accepted/approved by the Engineer.</td>
<td></td>
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<tr>
<td>7(a)</td>
<td>for indoor use 3 x 185 mm²</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7(b)</td>
<td>for outdoor use 3 x 185 mm²</td>
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<td></td>
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</table>
| 8 | **11KV AUTOMATIC VOLTAGE REGULATOR:**  
Supply of Type Tested & factory assembled (must having ISO-9001:2008) 11KV Automatic Voltage Regulators according to NEMA and ANSI C57.12.31 or equivalent standards and shall meet latest requirements of BPDB/local power supply authority.  
Automatic Voltage Regulators shall be type tested 200A at 6.35KV Single Phase in sealed tank design with digital Control panel, Ground clamps & standard accessories and as per following technical data/specification. (1set = 3nos).  
11KV AVR shall be from USA/ EU/Japan or equivalent with relevant authorization, technical offer, technical catalogue, warrantee & guarantee, Test Certificate etc from manufacturer.  
Rated voltage: 11KV, 3-phase/6.35KV,1-phase  
Rated frequency: 50Hz  
Rated current: 200Amps at 6.35KV  
Basic Insulation Level (BIL) : 95KV  
Rated range of regulation: +/-10% in 32steps of 0.625 % each  
Sealed tank design: Yes  
Cooling: Self  
Surge Protective device: 10KA, 9KV  
Temperature rise: Up to 65 degree C without increase the oxidation rate of Oil.  
Provision for 240VAC, 50Hz test input voltage for testing of the voltage regulator with external power supply: Yes  
Micro-processor based control panel: Yes  
Non-PCB oil for the voltage regulator: Yes  
Accuracy class of regulator control panel: Class-1  
Installation : Indoor/outdoor  
The following spares shall be supplied with AVR:  
6nos. Fuses  
2nos. Position Indicator Glass  
2nos. Oil Sight Gauge Glass  
1no. Digital control panel |
<p>| 9 | Installation, testing and commissioning of following 6.35KV, 50Hz single phase oil immersed Automatic Voltage Regulator (1set=3nos single phase) on prepared platform on pole /c.c. foundation with the help of necessary tools &amp; plants, skilled labour &amp; technician as per direction of the Engineer-in-charge. Bidder may visit the site before submitting bid with their own cost. |
| 10 | Supply of off-load 11KV 1-Pole, 600Amps single phase, self sequencing 2 position <strong>Bypass switch</strong> suitable for use with 11KV AVR Maximum design voltage rating: 15.5KV, Impulse withstand voltage: 110KV, Continuous current rating: 400A complete with all standard accessories manufactured and tested |</p>
<table>
<thead>
<tr>
<th>Line Item No</th>
<th>Description of Goods</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(For detailed please see technical specification in section-VII(3))</td>
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<tr>
<td></td>
<td>as per NEMA/IEC/VDE/BS/JIS standards accepted/approved by the Engineer.</td>
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<tr>
<td>11</td>
<td>Installation of 11KV bypass switch in Pre supplied and install on ground with require</td>
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<td>basement as per site condition in/c all assorted materials. Bidder may visit the</td>
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<tr>
<td></td>
<td>site before submitting bid. Bidder may visit the site before submitting bid with</td>
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<td>their own cost.</td>
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<tr>
<td>12</td>
<td><strong>High Tension Switchgear:</strong></td>
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<td></td>
<td>Supply of type tested &amp; factory assembled (must having ISO-9001:2008) confirming to</td>
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<td></td>
<td>IEC 298/694 High Voltage (11KV) 1 (one) Set (1 set = 3Nos; 1 incoming &amp; 2 outgoing)</td>
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<td></td>
<td>Switchgear of sheet steel clad (14SWG) dust &amp; vermin proof, free-standing, floor</td>
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<td>mounting completely with powder coated painting 11KV, 25KA, 50Hz, 3-phase indoor type</td>
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<td>high tension switchgear panel. The switchgear shall be inclusive of withdrawable type</td>
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<td>VCB, CT, PT, relay, ammeter, voltmeter, energy meter, 800Amps hard-drawn electrolytic</td>
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<tr>
<td></td>
<td>copper busbars, interlocked earth switch, internal wiring etc all equipment and</td>
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<td>accessories complete as per standard and instruction of Engineer in charge. The</td>
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<td>switchgear must comply with the requirement of BPDB and relevant local authority.</td>
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<td>All the major components of HT switchgear shall be from reputed manufacturer of</td>
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<td>Siemens /ABB / Eaton / Schneider or its equivalent &amp; approved quality in accordance</td>
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<td></td>
<td>with UL/NEMA/ IEC/ VDE/ BS/ JIS standards.</td>
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<td></td>
<td><strong>HT Incoming Feeder:</strong></td>
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<td></td>
<td>1-630Amps, 11KV, 50Hz Triple Pole, Earth Switch rated at 2.1KA at 3-sec to be</td>
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<td></td>
<td>interlocked with VCB.</td>
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<td></td>
<td>1-630A, 11KV, 25KA (3-Sec), rated short time current, 50Hz, electromagnetically</td>
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<td></td>
<td>operated/spring charged stored energy mechanism totally withdrawable type VCB,</td>
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<td></td>
<td>manual closing/tripping device for emergency operation, maximum service voltage</td>
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<td></td>
<td>12KV, short circuit breaking capacity 25KA(3-sec), 24-DC power pack for shunt</td>
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<tr>
<td></td>
<td>tripping coil, ON/OFF/Trip indicator. 2-11KV, cast resin insulated double pole</td>
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<tr>
<td></td>
<td>potential transformer having ratio 11000/110V (open delta), burden 50VA, class 0.5</td>
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<td>for metering &amp; protection.1- TP MCB for PT secondary protection.</td>
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<td></td>
<td>3-11KV, cast resin insulated dry type double core current transformer having ratio</td>
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<td></td>
<td>150/5/5A, burden 10-15VA, for metering first core of class 0.5M5 and second core</td>
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<td></td>
<td>protection of class 10P10.</td>
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<tr>
<td></td>
<td>1-Ammeter having scale (0-150)A with 4-way selector switch.1-Voltmeter having scale</td>
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<td></td>
<td>(0-15)KV with 7-way selector switch.</td>
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<td></td>
<td>1- 3 phase 3 wire, two part time of the solid state micro computer operated digital</td>
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<tr>
<td></td>
<td>KWH meter with indicating PEAK &amp; OFF PEAK energy with maximum demand indicator KW</td>
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<tr>
<td></td>
<td>with indicating time of 30minutes.</td>
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<td></td>
<td>1- Synchronous time switch for double tariff operation of KWH meter.</td>
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<td></td>
<td>1-Triple pole solid state micro-processor operated self powered IDMT relay with 2(two)</td>
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<td></td>
<td>over current instantaneous element &amp; short circuit and one earth fault protection</td>
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<td></td>
<td>element with standard setting. Indicating lamp ON/OFF/TRIP.3 -indicator lamps for</td>
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<td></td>
<td>presence of the phase (RYB) Panel heater.</td>
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<tr>
<td></td>
<td>2Nos.</td>
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<tr>
<td></td>
<td><strong>HT Outgoing (For 2Nos. 1250KVA Transformer):</strong></td>
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<tr>
<td></td>
<td>1-630Amps, 11KV, 50Hz Triple Pole, Earth Switch rated at 2.1KA at 3-sec to be</td>
</tr>
<tr>
<td></td>
<td>interlocked with VCB.</td>
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<tr>
<td>Line Item N°</td>
<td>Description of Goods</td>
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<tr>
<td>1-630A, 11KV, 25KA (3-Sec), rated short time current, 50Hz, electromagnetically operated/spring charged stored energy mechanism totallydrawable type VCB, manual closing/tripping device for emergency operation, maximum service voltage 12KV, short circuit breaking capacity 25KA(3-sec), 24-DC power pack for shunt tripping coil, ON/OFF/Trip indicator. 2-11KV, cast resin insulated double pole potential transformer having ratio 11000/110V (open delta), burden 50VA, class 0.5 for metering &amp; protection. 1- TP MCB for PT secondary protection. 3-11KV, cast resin insulated dry type double core current transformer having ratio 120/5/5A, burden 10-15VA, for metering first core of class 0.5M5 and second core protection of class 10P10. 1-Ammeter having scale (0-120)A with 4-way selector switch. 1-Voltmeter having scale (0-15)KV with 7-way selector switch. 1-Triple pole solid state micro-processor operated self powered IDMT relay with 2(two) over current instantaneous element &amp; short circuit and one earth fault protection element with standard setting. Indicating lamp ON/OFF/TRIP. 3-indicator lamps for presence of the phase (RYB) Panel heater.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Installations, testing and commissioning of following (as describe on HT SWITCHGEAR Item) 11 KV, 50 Hz, 3-phase, indoor type HT switchgear on prepared foundation with the help of necessary tools, plants, skilled labour &amp; technician as per direction of the Engineer-in-charge. <strong>With withdrawable type Vacuum Circuit breaker</strong> Bidder may visit the site before submitting bid with their own cost.</td>
</tr>
<tr>
<td>14(a)</td>
<td><strong>THREE PHASE DRY TYPE TRANSFORMER with Enclosure:</strong> Supply of following dry type cast resin, forced/natural air cooled, type tested, 3-phase, 50Hz, 11KV/0.415 KV &amp; 0.24 KV indoor type distribution transformer from internationally recognized manufacturer (ISO9001 certified) conformity to IEC 60076/11 standard. Transformer of DYn11 vector group having percentage impedance 4-6%, basic impulse insulation level 75 KV, HV &amp; LV bushings, manual 5 position standard tap changer, complete with two windings of high conductivity aluminum foil with insulation material in class H, earthing terminals, temperature sensor with thermometer, thermostat controlled blower fan (if required), lifting lugs, data plate etc. complete as required with maximum 100 degree C temperature rise and suitable for operation at 45 degree C ambient temperature. Transformer manufactured &amp; tested in accordance with relevant NEMA/UL/IEC/VDE/BS/JIS standards and as per approval/acceptance by the Engineer. (Country of origin: USA/ Japan/ EU Countries or equivalent) <strong>accepted/approved by the Engineer.</strong> (a) Capacity: <strong>1250KVA</strong> (b) No load loss: 2800 watts (Maximum) (c) Full load loss: 13500 watts (Maximum)</td>
</tr>
<tr>
<td>14(b)</td>
<td>Installation, testing and commissioning of following 11KV/.415KV transformers on prepared platform on pole /c.c. foundation with the help of necessary tools &amp; plants, skilled labour &amp; technician as per direction of the Engineer-in-charge.</td>
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<tr>
<td>No.</td>
<td>Description of Goods</td>
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<tr>
<td>2</td>
<td>2x1250KVA 3 phase transformer on C.C. pad. <strong>Bidder may visit the site before submitting bid.</strong></td>
</tr>
<tr>
<td>15</td>
<td>LT Panel:</td>
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<tr>
<td>15(a)</td>
<td><strong>Low Tension SWITCHGEAR:</strong> Supply of following type tested (according to IEC 439-1/2), 415V, 3-phase, 50Hz, indoor type Low Tension (LT) switch-gear from recognized manufacturer (ISO9001 certified) conformity to relevant IEC standard of sheet steel clad (14 SWG) dust &amp; vermin proof, free-standing, floor mounting, epoxy resin powder coat painted cabinet (25% spare space must be available in Cabinet to install spare circuit breaker excluding following) as per accepted/approved by the Engineer. LT Switchgear shall complete with digital voltmeter &amp; ammeter both with multifunction selection, indicating lamps for ON, OFF &amp; Trip, 1.2A/sq.mm hard drawn electrolytic copper busbar. All the major components shall be manufactured from ABB / Siemens / Eaton / Schneider or equivalent according to relevant UL/NEMA/VDE/IEC/JIS/BS Standards and shall have type test certificate according to relevant IEC Standard)</td>
</tr>
<tr>
<td></td>
<td><strong>INCOMING:</strong> 1 Set - 415V, 2500 amp. TP &amp; NE hard drawn electrolytic copper busbar. 1 No - 415V, 2000 Amps (80KA), TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection &amp; shunt releases, ON-OFF &amp; Trip indicating auxiliary contacts &amp; suitable for connection as required size and no of cable per phase &amp; complete in all respect as per technical specification &amp; shall have interlocking facilities with Bus-Coupler. 3 Nos. - 415V, 2000/5 ratio current transformer with suitable accuracy &amp; burden. 1-Multi-function meter with RS485 port 1-Set Push button “ON &amp; OFF”. 3nos. Indicating lamps ON/OFF/TRIP. 3nos. Phase Indicating lamps Red/Blue/Yellow.</td>
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<tr>
<td></td>
<td><strong>OUTGOING:</strong> 1 No - 415V, 1250A (65KA) TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection &amp; shunt releases, ON-OFF &amp; Trip indicating auxiliary contacts &amp; suitable for connection as required size and no of cable per phase &amp; complete in all respect as per technical specification. 3 Nos. - 415V, 1250/5 ratio current transformer with suitable accuracy &amp; burden. 1-Multi-function meter with RS485 port 1-Set Push button “ON &amp; OFF”. 3nos. Indicating lamps ON/OFF/TRIP. 3nos. Phase Indicating lamps Red/Blue/Yellow. (For PFI control). 1 No - 415V, 800A (65KA) TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection &amp; shunt releases, ON-OFF &amp; Trip indicating auxiliary contacts &amp; suitable for connection as required size and no of cable per phase &amp; complete in all respect as per technical specification. 3 Nos. - 415V, 800/5 ratio current transformer with suitable accuracy &amp; burden. 1-Multi-function meter with RS485 port</td>
</tr>
<tr>
<td>Line Item N°</td>
<td>Description of Goods</td>
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<tr>
<td>15(b)</td>
<td><strong>BUS Coupler:</strong>&lt;br&gt;Supply of 1X2000A, 65KA, TP motorized ACB with micro processor based selectively operating built-in-adjustable overload, adjustable short circuit protection; shunt release, ON-OFF &amp; Trip indicating auxiliary contacts &amp; having interlocking facilities (<strong>electrical/mechanical</strong>) with both the Main Incomers of LT panels. <strong>Normally Bus-coupler</strong> shall remain <strong>OPEN</strong> unless other-wise close for special purpose. The cost shall be inclusive of this item for motor operator relays and shunt tripping coils &amp; closing coil relays of both ACB (require for mechanical &amp; electrical interlock), copper dropper links &amp; others accessories for inter-connection with Main ACB of LT panels, Bus-coupler as per specification, Standard &amp; layout plan &amp; direction of the Engineer-in-charge.&lt;br&gt;1-Push button “ON, OFF”&lt;br&gt;3-Phase Indicators lamps Red/Blue/Yellow</td>
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<tr>
<td>Line Item N°</td>
<td>Description of Goods</td>
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<tr>
<td>15(c)</td>
<td><strong>INCOMING:</strong></td>
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<td></td>
<td>1 Set - 415V, 2500 amp. TP &amp; NE hard drawn electrolytic copper busbar</td>
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<td></td>
<td>1 No-415V, 2000 Amps (80KA), TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection &amp; shunt releases, ON-OFF &amp; Trip indicating auxiliary contacts &amp; suitable for connection as required size and no of cable per phase &amp; complete in all respect as per technical specification &amp; shall have interlocking facilities with Bus-Coupler.</td>
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<tr>
<td></td>
<td>3 Nos. - 415V, 2000/5 ratio current transformer with suitable accuracy &amp; burden; 1-Multi-function meter with RS485 port ; 1-Set Push button “ON &amp; OFF” ; 3nos. Indicating lamps ON/OFF/TRIP. ; 3nos. Phase Indicating lamps Red/Blue/Yellow.</td>
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<td></td>
<td><strong>OUTGOING:</strong></td>
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<td></td>
<td>1 No-415V, 1250A (65KA) TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection &amp; shunt releases, ON-OFF &amp; Trip indicating auxiliary contacts &amp; suitable for connection as required size and no of cable per phase &amp; complete in all respect as per technical specification.</td>
</tr>
<tr>
<td></td>
<td>3 Nos. - 415V, 1250/5 ratio current transformer with suitable accuracy &amp; burden; 1-Multi-function meter with RS485 port ; 1-Set Push button “ON &amp; OFF” ; 3nos. Indicating lamps ON/OFF/TRIP. ; 3nos. Phase Indicating lamps Red/Blue/Yellow.</td>
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<tr>
<td></td>
<td>2 Nos - 415V, 800A (65KA) TP motorized ACB with micro processor based time dependent selectively operating built-in-adjustable overload, adjustable short circuit protection &amp; shunt releases, ON-OFF &amp; Trip indicating auxiliary contacts &amp; suitable for connection as required size and no of cable per phase &amp; complete in all respect as per technical specification.</td>
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<tr>
<td></td>
<td>3 Nos. - 415V, 800/5 ratio current transformer with suitable accuracy &amp; burden. 1-Multi-function meter with RS485 port ; 1-Set Push button “ON &amp; OFF” ; 3nos. Indicating lamps ON/OFF/TRIP. ; 3nos. Phase Indicating lamps Red/Blue/Yellow.</td>
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<td></td>
<td>1 No - 415V, 600A (35KA) TP MCCB with electronic microprocessor based, built in adjustable overload &amp; adjustable short circuit protection, ON-OFF &amp; Trip indicating auxiliary contacts, rotary handle with pad lock facilities &amp; suitable for connection as required size and no of cable &amp; complete in all respect as per technical specification</td>
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<td>1 No - 415V, 500A (35KA) TP MCCB with electronic microprocessor based, built in adjustable overload &amp; adjustable short circuit protection, ON-OFF &amp; Trip indicating auxiliary contacts, rotary handle with pad lock facilities &amp; suitable for connection as required size and no of cable &amp; complete in all respect as per technical specification</td>
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<td>1 No - 415V, 400A (35KA) adjustable type TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release;</td>
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<td></td>
<td>2 Nos. - 415V, 300/320A (35KA) adjustable type TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release;</td>
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<td>1 No. - 415V, 80A (16KA) TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release.</td>
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<tr>
<td></td>
<td>1 No. - 415V, 30/32A (16KA) TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release.</td>
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</tbody>
</table>

(For detailed please see technical specification in section VII(3))
<table>
<thead>
<tr>
<th>Line Item N°</th>
<th>Description of Goods</th>
<th>Country of Origin</th>
<th>Brand and Model (when applicable)</th>
<th>Full Technical Specifications and Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>PFI Capacity- 750 KVAR</td>
<td></td>
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<td></td>
<td><strong>Automatic PFI Plants:</strong></td>
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<tr>
<td></td>
<td>Supply of following type tested(according to IEC-439-1/2), 415 V, 3-phase, 50 Hz, indoor type power factor improvement panel from recognized manufacturer(ISO9001 certified) conformity to relevant IEC standard of sheet steel clad (14 SWG) dust &amp; vermin proof, free-standing, floor mounting, epoxy resin powder coat painted cabinet as per accepted/approved by the Engineer. PFI Panel shall complete with TP busbars and earth block, micro processor controlled auto power factor correction relay with digital PF reading display, capacitor bank, contactor, fuse, ON-OFF indicators for every stage of capacitor bank (except directly connected one) etc. Major components shall be manufactured from ABB/ Siemens / Eaton /Schneider / Moeller / Frako or equivalent according to relevant NEMA/VDE/IEC/JIS/BS Standards and shall have type test certificate according to relevant IEC Standards.</td>
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<td></td>
<td>3 Nos.- 415V, 1500A hard drawn electrolytic copper busbar.</td>
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<td></td>
<td>1 No. - 415V, 15KVAR (as per required for transformer specification), 50 Hz TP power capacitor bank with built in / separate discharge coil for connection directly with line through Suitable capacity TPMCCB and fuse.</td>
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<td></td>
<td>1 No. - 415V, 10KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.</td>
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<tr>
<td></td>
<td>1 No. - 415V, 15KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.</td>
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<td></td>
<td>1 No. - 415V, 20KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.</td>
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<td></td>
<td>1 No. - 415V, 40KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.</td>
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<td></td>
<td>3 Nos. - 415V, 50KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.</td>
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<td>5 Nos. - 415V, 100KVAR, 50Hz TP power capacitor bank with built in/separate discharge resistor.</td>
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<tr>
<td></td>
<td>1No. - 415V, 32Amps, 50Hz auto TP magnetic contactor with AC3 duty.</td>
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<td></td>
<td>2 Nos. - 415V, 40 Amps, 50Hz auto TP magnetic contactor with AC3 duty.</td>
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<td>1No. - 415V, 80Amps, 50Hz auto TP magnetic contactor with AC3 duty.</td>
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<td>3 No. - 415V, 100 Amps, 50Hz auto TP magnetic contactor with AC3 duty.</td>
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<td>5 Nos. - 415V, 180 Amps, 50Hz auto TP magnetic contactor with AC3 duty.</td>
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<td>1 No. - 415V, 30Amps.TPMCCB</td>
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<td></td>
<td>1 No. - 415V, 32Amps.TPMCCB</td>
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<tr>
<td></td>
<td>1No. - 415V, 50Amps.TPMCCB</td>
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<tr>
<td></td>
<td>1No. - 415V, 80Amps.TPMCCB</td>
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</tr>
<tr>
<td></td>
<td>3 Nos. - 415V, 100Amps.TPMCCB</td>
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<tr>
<td></td>
<td>5Nos. - 415V, 200Amps.TPMCCB</td>
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</tr>
<tr>
<td>17</td>
<td>Installation, testing and commissioning of 415 V, 3-phase, 50 Hz indoor type <strong>LT switchgear/P.F.I. plant</strong> suitable for following capacity transformer on prepared c.c. foundation with the help of necessary tools &amp; plants, skilled labour &amp; technician as per direction of the Engineer-in-charge. Bidder may visit the site before submitting bid with their own cost.</td>
<td></td>
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<tr>
<td>Line Item N°</td>
<td>Description of Goods</td>
<td>Country of Origin</td>
<td>Brand and Model (when applicable)</td>
<td>Full Technical Specifications and Standards</td>
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<tr>
<td>18</td>
<td><strong>Generator:</strong> Supply of 400 / 230V, 3-phase, 50Hz. air/water cooled, floor mounted, indoor type following continuous capacity (Prime Power) electric <strong>500KVA generating set</strong> (with ATS &amp; with sound attenuated acoustically treated canopy (maximum sound level: 75 dBA at 7m distance). suitable for tropicalized country complete with four stroke, 1500 rpm, diesel engine with all standard accessories, viz. 12/24 volt DC battery &amp; auto battery charger with ammeter, radiator assembly, oil &amp; fuel pump, auto speed governor, air cleaner, fuel &amp; oil tank, fuel level &amp; oil pressure gauge, RPM &amp; hour meter, exhaust silencer, vibration isolator, mounting steel base frame etc including a safety &amp; protection device viz. auto shut off with indicators for overload, over &amp; under voltage high temperature, low oil pressure, over speed, low fuel level etc. coupled with brush less, self excited alternator having control panel with auto voltage regulator, voltmeter &amp; ammeter with selector switch, frequency meter, TPMCCB of required rating for overload &amp; instantaneous short circuit release, auto start &amp; auto change over to load within 10 sec during normal power failure and auto stop &amp; auto change over to normal supply within 5 minutes after restoration of normal power supply, indicator for 3 Phase ON-OFF - Trip etc including maintenance tools, 3 sets of detailed technical catalogues &amp; maintenance manual. Manufactured, assembled and tested in accordance with NEMA / IEC / VDE / JIS standards. The Bidder should free Operation and Maintenance works engaging 01 skilled technician &amp; also supply of necessary spares and consumables such as Oil filter, Air filter, Fuel filter, coolant without Engine oil and Fuel within 12 (Twelve) months (24/7) warranty obligations from the date of official hand over of the brand new 500KVA(prime power) Diesel Power Generator. Ensuring after sale service with spare parts within the life time of the generator sets.</td>
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<td>19</td>
<td>Installation, testing &amp; commissioning of following electric generator on prepared cc pad with the help of necessary T &amp; P, skilled labour, technician, Engineer including 8 hrs /7 day trial run operation by skilled operator with supply of necessary fuel &amp; lubricant as per manufacturers instruction manual and in accordance with relevant IEC/NEMA/VDE/JIS standards so that vibration transfer rate to foundation shall be almost zero. <strong>500 KVA manual/auto/auto with soundproof acoustically treated canopy generating set. Bidder may visit the site before submitting bid with their own cost.</strong></td>
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<td>Line Item Number</td>
<td>Description of Goods</td>
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<td>20</td>
<td>Trench cutting with following dimension through RCC floor /Road cutting of at Bangladesh Bank Training Academy premises (for laying HT/LT cable through pvc pipe) carefully using electric hammer, drill machine or MS rod cutter with protecting any damages existing floor and blinding the prepared trench with concrete (1:2:4) Placing necessary no of 12mm MS rod with welding, shuttering, centering and curing/road carpeting etc engaging expert mason/ technician all complete works as per direction of the Engineer in charge. Bidder may visit the site before submitting the tender. Bidder may visit the site before submitting bid with their own cost.</td>
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<td>21</td>
<td>Providing &amp; laying of following sizes HT (11KV) PVC insulated, sheathed, screened &amp; armoured cable (NYSEYFGbY)/HT (11KV) armoured XLPE cable in prepared trench. All electrical contacts shall be of brass/copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC/BDS/ BS/ VDE standards. The work shall be carried out as per direction/approval/acceptance of the Engineer. 125mm PVC pipe having wall thickness of 3mm or Surface with necessary supports With 3C x 185 sq.mm (NYSEYFGbY) HT (11 KV) Cables through prepared trench through manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<td>22</td>
<td>CABLE-RACE WAY (Ladder/tray) Supply, fabrication, fitting, fixing of indoor/outdoor cable tray/ladder made of 16SWG galvanized sheet steel/angle bar, flat bar of approved quality of following sizes complete with necessary hangers, supports, cover junction box, hangers, clamps, bends, nuts, bolts, washer &amp; all other accessories as per drawing, specifications &amp; direction of the Engineer-in-charge. 500mm x 75mm</td>
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<td>23</td>
<td>Providing &amp; laying of the following additional PVC insulated &amp; sheathed cable (NYY) / XLPE insulated &amp; PVC sheathed cable (2XY) with PVC insulated green/white coloured ECC wire (BYA) connecting at both ends, through PVC pipe with necessary accessories in prepared a common trench In kutcha ground/pucca floor/ through the Cable tray etc. All electrical contacts shall be of brass/copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC/BDS/ BS/ VDE standards and as per detailed specification mentioned . The work shall be carried out as per direction/approval/acceptance of the Engineer.</td>
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<td>23(a)</td>
<td>1C-4x400sq.mm (NYY) with 185sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 125mm having wall thickness of 3mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<td>23(b)</td>
<td>1C-4x300sq.mm (NYY) with 150sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 125mm having wall thickness of 3mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<tr>
<td>Line Item No.</td>
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<td>Engineer:</td>
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<td>23(c)</td>
<td>1C-4x240sq.mm (NYY) with 120sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 125mm having wall thickness of 3mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<td>23(d)</td>
<td>1C-4x185sq.mm (NYY) with 95sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 100mm having wall thickness of 3mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<td>23(e)</td>
<td>1C-4x150sq.mm (NYY) with 70sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 100mm having wall thickness of 3mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<td>23(f)</td>
<td>1C-4x70sq.mm (NYY) with 35sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 65mm having wall thickness of 2.5mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<tr>
<td>23(g)</td>
<td>1C-4x50sq.mm (NYY) with 25sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 65mm having wall thickness of 2.5mm. Cables manufactured by Paradise/ BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<td>23(h)</td>
<td>1C-4x10sq.mm (NYY) with 10 sq.mm (BYA) ECC wire through PVC pipe of minimum inner dia 40mm having wall thickness of 1.9mm. Cables manufactured by Paradise / BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<td>24</td>
<td>Complete MDB/DB:</td>
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<td></td>
<td>Providing and fixing 500v 3-PHASE BUSBAR system assembled in 18 SWG M.S. board of depth 228mm (9”) duly painted with gray hammer paint on outside and enamel paint in inside surfaces having built in push type locking arrangement including metal bridges of suitable size for fixing of all electrical control devices complete with suitable anchoring arrangement in wall/column and keeping provision for cable inlets and exits as required (only front surface of the board will be considered for measurement) having the following components and specifications in/c arrangement of cable/wire connection, hinged type top cover, locking arrangement, two coats gray hammer painting over anti-corrosive coat, rail for TPMCB/SPMCB etc. on prepared board/wall. Board size 18”x14” with 1 Set - 500V, 100 Amp. TP, NE &amp; Earth hard drawn electrolytic copper busbar with mini length of TP, NE is 10”</td>
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## Section VII. Schedule of Requirements

<table>
<thead>
<tr>
<th>Line Item No.</th>
<th>Description of Goods</th>
<th>Country of Origin</th>
<th>Brand and Model (when applicable)</th>
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<tr>
<td></td>
<td><strong>INCOMING:</strong> 1Nos. - 415V, 50/60 (10KA) TPMCCB with thermal overload &amp; instantaneous electro-magnetic short circuit release.</td>
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</table>
|               | **OUTGOING:** 2 Nos. - 500V grade, 30/40A (6KA) TPMCB with thermal overload & instantaneous electro-magnetic short circuit release.  
5Nos. - 500V grade, 15/20/30A (6KA) SPMCB with thermal overload & instantaneous electro-magnetic short circuit release.  
TPMCBS of DORMAN SMITH / MEM / Siemens/ Schneider/ Eaton/ or equivalent accepted/approved by the Engineer. | | | |
| 25 | Earthing the electrical installation with 40mm (1.5") dia G.I. pipe (Earth electrode) having 6.35mm. dia hole across the pipe at 305 mm. interval securely bonded by soldering with 2 nos. of No2 SWG HDBC earth leads with its protection by 20mm. (3/4") dia G.I. pipe with No-2 HDBC wire up-to plinth level run at a depth of 609.6mm. (2 ft.) below. G.L. up-to main board to be earthed including necessary connecting copper sockets, bolts, nuts, etc. complete for maintaining earth resistance within 1 ohm.  
Depth of bottom of main electrode at 37338mm. (122.5 ft) from GL & length of electrode 36576mm. (120 ft). | | | |
| 26 | Construction of **Earthing inspection pit** inside measurement 600mm x 600mm with 250mm thick brick in cement mortar (1:4) with 100mm thick RCC top slab (1:2:4) with 1% reinforcement 450mm dia water sealed CI man-hole cover with locking arrangement including necessary earth works, site filling and one brick flat soling 75 mm thick (1:3:6) base concrete for making inlet channel & 12mm thick (1:2) cement plaster with neat finishing etc. all complete up to a depth of .75 meter. | | | |
| 27 | Providing & drawing No-2 HDBC wire through 12.7mm. (½") dia G.I. pipe including fitting, fixing the G.I. pipe in wall or column or in katcha/Pacca ground complete as required. | | | |
| 28 | Surface channel wiring for the following point looping at the switch board with earth terminal including circuit wiring with 1C-2x2.5sq.mm PVC insulated and sheathed stranded cable (BYM) & 1.5sq.mm green/white colored PVC insulated ECC wire (BYA) through minimum 1mm thick PVC channel complete with 18 SWG GP sheet switch board (preferably concealed) with 3mm thick ebonite sheet cover, circular box, ceiling rose, fixing materials, other accessories etc. as required and mending the damages good. All electrical contacts shall be of brass/copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC/BDS/BS/VDE standards. **The work shall be carried out as per direction/approval/acceptance of the Engineer.** | | | |
| Light/Exhaust or Wall bracket Fan Point | | | | |
| 29 | Surface channel wiring with the following PVC insulated and sheathed stranded cable (BYM) & green/white coloured PVC insulated ECC wire (BYA), through minimum 1 mm thick PVC channel complete with fixing materials, other accessories etc. as required including mending the damages good. | | | |
### Description of Goods

(For detailed please see technical specification in section-VII(3))

<table>
<thead>
<tr>
<th>Line Item N°</th>
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</thead>
<tbody>
<tr>
<td>30(a)</td>
<td>All electrical contacts shall be of brass/copper connected through connector or soldering (no twisting shall be allowed) and cables shall be manufactured and tested according to relevant IEC/BDS/BS/VDE standards. The work shall be carried out as per direction/approval/acceptance of the Engineer.</td>
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<td>30(b)</td>
<td>1C-2x2.5sq.mm. (BYM) cable with 2.5sq.m (BYA) ECC wire. Cables manufactured by Paradise/BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<tr>
<td>30(c)</td>
<td>1C-2x6 sq.mm. (BYM) cable with 6sq.m (BYA) ECC wire. Cables manufactured by Paradise / BRB or any other company(s) having valid test certificate from Internationally accredited Laboratory accepted/approved by the Engineer.</td>
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<td>31</td>
<td><strong>GANG SWITCH/_SOCKET/ FAN REGULATOR</strong> Providing &amp; fixing 250 volts, 5/6 amps. (minimum) concealed type following switch / switch socket manufactured and tested in accordance with relevant IEC/ VDE/NEMA/BS/JIS standards mounted on required size 18 SWG galvanized plain sheet board of 76.2 mm (3”) depth. All electrical contacts shall be of brass/copper Dynamic /MEP/METRO /HAGER/ SK/Super Star or equivalent brand accepted/approved by the Engineer.</td>
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<tr>
<td>31(a)</td>
<td>One gang switch</td>
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<td>31(b)</td>
<td>Two gang switch</td>
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<td>31(c)</td>
<td>Three gang switch</td>
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<td>31(d)</td>
<td>Four gang switch</td>
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<tr>
<td>31(e)</td>
<td>One gang switch &amp; one 5 amps. 2-pin socket combined.</td>
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<td>31(f)</td>
<td>Gang type Fan Regulator</td>
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<td>32</td>
<td><strong>Superior Quality LED bulb:</strong> 50,000 hrs (min) lifetime.), 185-265V, 50Hz), 12/15 watt Spiral Screw Type bulb, 100lm/wall, colour temperature 6500±500, CRI: 80 or equivalent brand accepted/approved by the Engineer.</td>
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<td>33</td>
<td>Providing and fixing of following axial flow A.C capacitor type wall mounted exhaust fan complete with blade, steel frame standard wall louver shutter, PVC insulated connecting wire etc complete as required including cutting wall and mending good the damages as per direction of the Engineer. 16” Exhaust fan, 400/550W, RPM-1420, steel body&amp; blade, Round shape Brand &amp; model: Supper king &amp; DF 4G-4 or approved by engineer in charge.</td>
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<td>34</td>
<td>Dry Chemical Powder Type Fire Extinguisher: Supply &amp; fixing the following capacities multipurpose ABC&amp;E dry chemical powder stored pressure type with manometer system Fire Extinguisher suitable for repeated use complete with wall bracket, CO Cartridge, easy refilling system etc. as per sample accepted/approved by the Engineer. Country of Origin: China / Malaysia or Equivalent</td>
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<td>Line Item</td>
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<td>35</td>
<td>Carbon-Di-Oxide Type Fire Extinguisher Supply &amp; fixing the following capacities Carbon-di-Oxide type Fire Extinguisher suitable for repeated use complete with wall bracket, discharge nozzle etc. <strong>as per sample accepted/approved by the Engineer.</strong> Country of Origin: China / Malaysia or Equivalent 5 Kg. capacity.</td>
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<tr>
<td>36</td>
<td>Foam Type Fire Extinguisher Supply &amp; fixing the following capacity Foam type Fire Extinguisher suitable for repeated use complete with wall bracket etc. <strong>as per sample accepted/approved by the Engineer.</strong> Country of Origin: China / Malaysia or Equivalent 9 Litre capacity.</td>
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<td>37(a)</td>
<td>Disconnecting and removing the existing sub-station equipment (Transformer, HT &amp; LT, PFI, ATS), old cables and stacking them in a designated places and reconnecting the cables and circuit breaker with newly installed sub-station equipment (Specially with LT panel) and carried out 2 (two) nos 800KVA dry type transformer from BBTA, MIlpur Dhaka to Bangladesh Bank, Rajshahi office with proper handling and performing routine test from local transformer manufacturing factory/laboratory as per approval and direction of the engineer. Bidder may visit the site before submitting tender. Bidder may visit the site before submitting bid with their own cost.</td>
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<td>37(b)</td>
<td>Awarded Bidder shall complete works mention on item No: 18 &amp; 19 (Supply and installation of generator) as per delivery schedule(one month before than other items). Minimum 500KVA power shall supply by those generators with necessary cable connection as required as per site condition during the replacement period of 2x800KVA existing sub-station equipments by installing and commissioning the proposed 2x1250KVA substation. In this case Awarded Bidder shall arrange generator operator, fuel etc for running generator (24x7) to provide minimum 500KVA power for Emergency requirement of BBTA. Bidder include all of cost in this item regarding as mentioned. Or Awarded Bidder may Provide other option to provide minimum 500KVA power round o’clock with their own cost as per approval of engineer in charge.</td>
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<td>38</td>
<td>The Bidder shall be responsible for communicating with the local electric supply authority and other authority viz. Chief Inspector of electric license board, Fire service and civil defense authority (if required), directorate of environment (if required) Govt. of Bangladesh, for their <strong>inspection/clearance and additional electric load sanction(increase).</strong> The Bidder shall communicate for additional electric load sanction and other formalities on behalf of the employer till the sub-station is commissioned and handed over. However, all the security deposit money (Govt fee) issued by above mentioned authorities for energy meter and its installation and additional electric load sanction fee for the proposed substations will be directly paid to respective authority by the employer on submission of deposit slip. But the all other <strong>incidental charges</strong> for obtaining HT connection with RMU and Substation installation &amp; commissioning to be included in this item to complete as per local electric supply authority requirement.</td>
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<td>01</td>
<td><strong>Stripping of existing pavement tiles</strong> as specified in the drawing and directed by engineer with the mortar beneath and removal of the derbies to a safe, dry place, cleaning to the original RCC surface etc all complete as per direction of the Engineer.</td>
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<td>02</td>
<td>Earth work in excavation for transformer base foundation up to 1.5 m depth and maximum 10 m lead in medium stiff clayey soil including layout, providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and marking layout with chalk powder, providing necessary tools and plants, protecting and maintaining the trench dry etc., stacking, cleaning the excavated earth at a safe distance out of the area enclosed by the layout etc. all complete and accepted by the Engineer, subject to submit method statement of carrying out excavation work to the Engineer for approval. However, Engineer’s approval shall not relieve the Bidder of his responsibilities and obligations under the contract.</td>
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<td>03</td>
<td><strong>One layer of brick flat soling</strong> in foundation or in floor with first class or picked jhama bricks including preparation of bed and filling the interstices with local sand, leveling etc. complete and accepted by the Engineer.</td>
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<td>04</td>
<td><strong>Mass concrete (1:2:4)</strong> in basement floor with cement, sand (F.M. 1.2) and picked jhama chips including breaking chips, screening, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer. (Cement: CEM-II/A-M)</td>
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<td>05</td>
<td>Reinforced cement concrete works using wooden shutter, with minimum cement content relates to mix ratio 1:2:4 having minimum $f_{cu} = 24$ Mpa, and satisfying a specified compressive strength $f_{c'}= 19$ Mpa at 28 days on standard cylinders as per standard practice of Code ACI/BNBC/ASTM &amp; cement conforming to BDS EN-197-1- CEM 1, 52.5N (52.5MPa) / ASTM-C 150 Type – I, best quality sand [50% quantity of best local sand (F.M. 1.2) and 50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2] and 20 mm down well graded picked jhama brick chips conforming ASTM C-33 including breaking chips and screening, making, placing shutter in position and maintaining true to plumb, making</td>
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<td>Line Item No</td>
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<td>shutter water-tight properly, placing reinforcement in position; mixing in standard mixer machine with ho...</td>
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<td>06</td>
<td>Supplying, fabrication and fixing to details as per design: Grade 400 (RB 400 / 400W: complying BDS ISO 6935-2:2006) ribbed or deformed bar produced and marked according to Bangladesh Standard, with minimum yield strength, fy (ReH) = 400 MPa but fy not exceeding 418 MPa for Reinforced Cement Concrete, produced and marked in accordance with BDS ISO 6935-2: 2006 (or standard subsequently released from BSTI) including straightening and cleaning rust, if any, bending and binding in position with supply of G.I. wires, splices or laps what so ever etc. complete in all respects and accepted by the Engineer.</td>
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<td>07</td>
<td>Brick works with first class bricks in cement sand (F.M. of sand 1.2) mortar (1:6) in foundation and plinth, filling the joints/interstices fully with mortar, racking out the joints, cleaning and soaking the bricks at least for 24 hours before use and curing at least for 7 days etc. all complete including cost of water, electricity and other charges and accepted by the Engineer.</td>
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<tr>
<td>08</td>
<td>38mm thick artificial patent stone (1:2:4) flooring with cement, best quality coarse sand (50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2 and 50% best local sand of FM 1.2) and 12 mm down well graded stone chips, laying the concrete in alternate panels, compacting and finishing the top with neat cement and curing at least 7 days in all floors including cost of water, electricity and other charges etc. all complete and accepted by the Engineer.</td>
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<tr>
<td>09</td>
<td>125mm brick works with first class bricks in cement sand (F.M. 1.2) mortar (1:4) and making bond with connected walls including necessary scaffolding, raking out joints, cleaning and soaking the bricks for at least 24 hours before use and washing of sand curing at least for 7 days in all floors including cost of water, electricity and other charges etc. all complete and accepted by the Engineer.</td>
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<td>10</td>
<td>Minimum 12mm thick cement sand (F.M. 1.2) plaster (1:4) with fresh cement to wall both inner-and outer surface, finishing the corner and edges including washing of sand cleaning the surface, scaffolding and curing at least for 7 days, cost of water, electricity and other charges etc. all complete in all respect as per drawing and accepted by the Engineer.</td>
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<tr>
<td>11</td>
<td>Manufacturing, supplying, fitting and fixing M.S. grill fencing as per design with outer frames having 38 x 38 x 6 mm M.S. angle and inner members having 6 mm dia M.S. rod placed @ 110 mm c/c diagonally on both direction, welding each cris-cross end of rod with corners of outer frame including cutting rods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Line Item No</td>
<td>Description of Goods</td>
<td>Country of Origin</td>
<td>Brand and Model (when applicable)</td>
<td>Full Technical Specifications and Standards</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>-----------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>and size angles to required shapes and size and setting the entire fence with the previously installed tube</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(angle box) post including thorough and full welding the frame with the angle box posts, painting 2 coats</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>of synthetic enamel paint over a coat of anti-corrosive priming etc. all complete as per drawing and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>accepted by the Engineer.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Supplying, fitting and fixing ms grill made of 10 mm dia M.S. rods provided 75 mm c/c in any position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>both ways as per design with outside frame 25 x 25 x 6 mm M.S. angle including fabricating welding in each</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>point painting 2 coats of synthetic enamel paint over a coat of anti-corrosive priming including cost of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>electricity, tools and plants, workshop charges, carriage of the same including cutting groves in the R.C.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>or brick work, mending good the damages with C.C. (1:2:4) etc. complete for all floors accepted by the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engineer. [Rate is excluding the cost of painting]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Total weight per sqm should be min 57.68 kg. and add or deduct @ Tk. 35.00 for each kg. excess or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>respectively)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Plastic emulsion paint of approved best quality and colour delivered from authorized local agent of the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>manufacturer in a sealed container, applying to wall and ceiling in two coats over lime putty of specified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>brand applied on primer or sealer elapsed specified time for drying/recoating including cleaning drying,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>making free from dirt, grease, wax, removing all chalked and scaled materials, fungus, mending good the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>surface defects, sand papering the surface and necessary scaffolding, spreading by brush/roller/spray</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>etc. all complete in all floors accepted by the Engineer.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Painting to grills in two coats with approved best quality and colour of synthetic enamel paint delivered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>from authorized local agent of the manufacturer in a sealed container, having highly water resistant, high</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>bondibility, flexible, using specific brand thinner applied by brass/roller/spray over a coat of priming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>elapsed time for drying including surface cleaning from dust, oil or dirt, smoothening, finishing and</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>polishing with sand paper and necessary tools, scaffolding, testing charges etc. all complete in all floors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>approved and accepted by the Engineer.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Cleaning of existing rubbish or wastage elements of the site with generated wastage elements during the</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>work, broken fragments, floor cleaning, plaster wastes etc in all respects and disposal to environmentally</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>safe places out of the Bank premise.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Dismantling of unserviceable/Damaged brick works(with cements or lime mortar) of thickness 75/125 mm in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>foundation and superstructure and removal of debris to safe distance. Bidder may visit the site before</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>submitting bid with their own cost.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Technical Specifications

The purpose of the Technical Specifications (TS), is to define the technical characteristics of the Goods and Related Services required by the Purchaser. The Purchaser shall prepare the detailed TS take into account that:

- The TS constitute the benchmarks against which the Purchaser will verify the technical responsiveness of bids and subsequently evaluate the bids. Therefore, well-defined TS will facilitate preparation of responsive bids by bidders, as well as examination, evaluation, and comparison of the bids by the Purchaser.

- The TS shall require that all goods and materials to be incorporated in the goods be new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided for otherwise in the contract.

- The TS shall make use of best practices. Samples of specifications from successful similar procurements in the same country or sector may provide a sound basis for drafting the TS.

- The Bank encourages the use of metric units.

- Standardizing technical specifications may be advantageous, depending on the complexity of the goods and the repetitiveness of the type of procurement. Technical Specifications should be broad enough to avoid restrictions on workmanship, materials, and equipment commonly used in manufacturing similar kinds of goods.

- Standards for equipment, materials, and workmanship specified in the Bidding Documents shall not be restrictive. Recognized international standards should be specified as much as possible. Reference to brand names, catalogue numbers, or other details that limit any materials or items to a specific manufacturer should be avoided as far as possible. Where unavoidable, such item description should always be followed by the words “or substantially equivalent.” When other particular standards or codes of practice are referred to in the TS, whether from the Borrower’s or from other eligible countries, a statement should follow other authoritative standards that ensure at least a substantially equal quality, then the standards mentioned in the TS will also be acceptable.

- Reference to brand names and catalogue numbers should be avoided as far as possible; where unavoidable the words “or at least equivalent” shall always follow such references.

- Technical Specifications shall be fully descriptive of the requirements in respect of, but not limited to, the following:

  (a) Standards of materials and workmanship required for the production and manufacturing of the Goods.
(b) **Detailed tests required (type and number).**

(c) **Other additional work and/or Related Services required to achieve full delivery/completion.**

(d) **Detailed activities to be performed by the Supplier, and participation of the Purchaser thereon.**

(e) **List of detailed functional guarantees covered by the Warranty and the specification of the liquidated damages to be applied in the event that such guarantees are not met.**

- *The TS shall specify all essential technical and performance characteristics and requirements, including guaranteed or acceptable maximum or minimum values, as appropriate. Whenever necessary, the Purchaser shall include an additional ad-hoc bidding form (to be an Attachment to the Bid Submission Sheet), where the Bidder shall provide detailed information on such technical performance characteristics in respect to the corresponding acceptable or guaranteed values.*

When the Purchaser requests that the Bidder provides in its bid a part or all of the Technical Specifications, technical schedules, or other technical information, the Purchaser shall specify in detail the nature and extent of the required information and the manner in which it has to be presented by the Bidder in its bid.

*[If a summary of the Technical Specifications (TS) has to be provided, the Purchaser shall insert information in the table below. The Bidder shall prepare a similar table to justify compliance with the requirements]*

**“Summary of Technical Specifications. The Goods and Related Services shall comply with following Technical Specifications and Standards:**

<table>
<thead>
<tr>
<th>Item No</th>
<th>Name of Goods or Related Service</th>
<th>Technical Specifications and Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>[insert item No]</td>
<td>[insert name]</td>
<td>[insert TS and Standards]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Detailed Technical Specifications and Standards [whenever necessary].**

*[Insert detailed description of TS]*
3.1. Electrical Requirements for BBTA

3.1.1. General Specification
3.1.1.1. General:
The specification for the part of the contract mentioned below cover design, manufacture/assembling, supply, installation, testing and commissioning of proposed Sub-station equipment and hookup with existing 2x800KVA Substation without interrupting regular power supply at Bangladesh Bank Training Academy, Mirpur, Dhaka.

3.1.1.2. Scope of Work:
The scope of work and obligation of the specification consists the following as minimum:
(a) Layout of Substation and trench, manufacture/assembling, inspection, delivery at site, installation, testing and commissioning in accordance with all requirement of specifications and standards (IEC/VDE/NEMA/JIS/UL/ISO).
(b) Supply and delivery all equipment and spares needed for installation, testing and commissioning.
(c) Assembly, pre-wire and testing at factory of all necessary equipment and accessories.
(d) Carry out of all required test of all equipment and machines and to provide all apparatus for site testing and commissioning.
(e) Test certificate for of all major equipment must be submitted.
(f) Taking permission from BPDB/local electricity power supply authority, Electrical licensing Board, environment authority (if required) of Government of People’s Republic of Bangladesh.
(g) Making application and load sanction from local Electricity supply authority on behalf of Bangladesh Bank.
(h) All the work shall have to complete without hampering the power supply during regular office time and other time.
(i) Shall be responsible for all manpower and tools as required related to supply, installation, testing, and commissioning.

3.1.1.3. Standard, Code and Regulation:
The installation and commissioning shall be carried out in conformity with the Electricity rules of the Govt. of Bangladesh also special requirements of the Chief Electrical Inspector, Govt. of Bangladesh or the Bangladesh Power development Board (BPDB) or local Electricity supply authority or legal authority, shall also be complied with no extra cost to the Employer.

The following standards in addition will be followed for design, manufacture, installation, testing and commissioning of this project as per requirement:
   a) International Electro technical Commission (IEC)
   b) Institute of Electrical and Electronics Engineers (IEEE)
   c) Nation Electric Manufacturers Association (NEMA)
   d) German International Standard (VDE)
   e) Japan International Standard (JIS)
   f) International Standard Organization (ISO), 9001 & 14001
   g) British Standard (BS)
   h) EU 548/2014
   i) Underwriters Laboratories (UL)
   j) Environmental/Climatic/Fire Class
3.1.1.4. Climatic Condition:
All the equipment supplied under the Contract shall be entirely suitable for the climatic conditions prevailing at site. The project area and vicinity is close to sea level and is in a tropical climate. The ambient shade temperature variation is between 4°C and 45°C with periods of high humidity. Between May and November low lying areas are subject to flooding. Atmospheric pollution is moderate and special insulator design or washing is not required. The area is subject to high winds of typhoon strength.

- Maximum ambient shade temperature: 45°C
- Minimum ambient shade temperature: 4°C
- Maximum daily average temperature: 35°C
- Maximum annual average temperature: 25°C
- Solar radiation: 100mW/sq.cm
- Rainfall: 2.5 m/annum
- Relative humidity, maximum: 100%
- Relative humidity, average: 80%
- Altitude less than: 150 m

3.1.1.5. Operating Condition: The High Tension (HT) switch gear, Transformer, Low Tension (LT) switch gear, Power factor correction equipment shall be capable for continuous operation at above mentioned climatic condition.

3.1.1.6. Design and Construction of Equipment:
All materials, equipment, accessories shall be designed, manufactured installed, tested and commissioned according to the Standard, Code and Regulation (as per requirement of each item of Schedule of Requirements) mention in clause No. 3,4,10,12 of Part A and modern Engineering practices. All parts of equipment and installed must be suitable in every respect for continuous operation and maximum output under various permissible load and climatic condition.

3.1.1.7. Inspection/Testing/Training:
   a) The Factory Acceptance Test carried out by 03(three) Engineers of Bangladesh Bank for Equipment like Generator, HT AVR, Dry type transformer, HT Switchgear Panel, LT Switchgear Panel, PFI Panel. All expenses related to Inspection/Test shall bear by the Bidder as per Government rules. Bidder shall also arrange training and perform required test for required Equipment or components as per specification.
   Bidder shall provide schedule of mentioned program before inspection factory/ warehouse/ laboratory.
   b) Post Landing Inspection shall be carried out by nominated firm which shall be selected from at least three proposed recognized company/firm. All expense related to Inspection/Test shall be borne by the Bidder.

3.1.1.8. Test: The Bidder shall confirm of following test for required item as per specification (as per IEC regulation or other mentioned standard):
   a) Type Test
   b) Short Circuit Test
   c) Open Circuit Test
   d) HV/Impulse Test
   e) Environmental Class
   f) Other required Test(if any)
3.1.1.9. **Corrosion and Protection:** The Bidder shall provide protection against corrosion of the materials supplied and installed.

3.1.1.10. **System Electrical Parameters:**

**System Conditions:**

HT Equipment supplied under this Contract shall be suitable for the following system conditions.

- Normal System voltage (HT) between phase: 11KV
- Rated system voltage (HT): 12KV
- Lightning impulse withstand: 75KV
- 50 Hz withstand 1 minute: 28KV
- Symmetrical short-circuit current (3 sec): 31.5KV
- System Frequency: 50Hz

LT Equipment supplied under this Contract shall be suitable for the following system conditions.

- LT Voltage: 415/240V local voltage
  - 400/231V opening voltage
  - 457V maximum permissible Voltage by BPDB/REB
- The standard power frequency: 50Hz.

3.1.1.11. **Earthing:**

Each electrical equipment must be provided with minimum one earth terminals as per specification of the equipment manufacturer.

3.1.1.12. **Insulation Co-ordination:**

The insulation level for High Tension switchgear, Isolator, Dropout Fuses, lightning arrester and transformer are specified below. Max service voltage and rated voltage shall be according to IEC standard

- According to IEC standard services voltage: 11KV
- Max service voltage shall be considered: 12KV
- The respective test voltage shall be:
  - a) Impulse withstand test voltage (BIL): 75KV
  - b) Power frequency withstand test voltage: 28KV
  - c) Lightning arrester standard voltage: 12KV

13. **Execution and Supervision:**

The Bidder shall maintain liaison with Chief Electrical Inspector, Government of Bangladesh and with the local Electricity Supply Authority or any other Legal Authority regulating the electrical works or installation and get their approvals for substation and connections, equipment installation.

At least the following Engineer/Manpower shall be provided in the site during execution of the work.

<table>
<thead>
<tr>
<th>No of person</th>
<th>Position</th>
<th>Total Works Experience</th>
<th>In Similar Works Experience (years)</th>
<th>Rate of deduction for absence of Manpower</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>B.Sc Engineer (Electrical)</td>
<td>Minimum Ten years</td>
<td>05 (Five) years</td>
<td>TK.1200/day/Person</td>
</tr>
<tr>
<td>01</td>
<td>Diploma Engineer (E/M)</td>
<td>Minimum Five years</td>
<td>03 (Three) years</td>
<td>TK. 850/day/Person</td>
</tr>
<tr>
<td>02</td>
<td>Foreman, Electrician</td>
<td>Minimum Five years</td>
<td>03 (Three) years</td>
<td>TK. 500/day/Person</td>
</tr>
</tbody>
</table>

The Bidder shall own or have proven access to hire or lease of the major Equipment, in full working order as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Equipment Type and Characteristics</th>
<th>Minimum Number Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Mager</td>
<td>Minimum 01 Nos</td>
</tr>
</tbody>
</table>
3.1.1.14. Commissioning:
   a) Bidder shall carry out the commissioning of proposed new substation by replacing the old
      substation without hampering of regular office power supply. This process shall be completed
      by concerning the local power supply authority. Bidder shall arrange all procedure to avoid
      interruption of office Power supply.
   b) Bidder should have related previous experience.
   c) Bidder shall also be responsible for relocation of existing HT energy metering unit along with
      all related arrangement and equipment. Bidder shall also arrange all procedure for this job to
      avoid interruption of office Power supply.
   d) Bidder shall maintain all sorts of safety and security measures during execution of whole
      work including commissioning. Bidder shall be liable for any kinds of damages and accident
      during execution of whole work including commissioning process.

3.1.1.15. Particulars of Equipment:
The offered equipment shall be from manufacturers (having ISO 9001:2008 certificate) that
manufacture and tested by relevant IEC standard and also manufacturing similar Equipment for last
five years. Equipment are suitable for using topical country like Bangladesh. All LT equipment shall
conform to 415V, 3-phase/240V single phase, 50Hz and HT Equipment shall conform to 11000V, 3-
phase, 50Hz. The type test certificate of AVR, Transformer, HT Switchgear, VCB, ACB, MCCB,
Magnetic Bidder from manufacture shall be submitted.

3.1.1.16. General Requirements for Cables (HT & LT):

**Design & Construction Requirements:** All Cables are to be in accordance with the latest recognized
rules of workmanship and modern engineering practice and must be suitable in every respect for
continuous operation at maximum output under the climatic conditions as specified above.

**Material Requirements:** Conducting materials for cables must be of 99.99% pure annealed stranded
copper and insulation of thermoplastic materials based on PVC or XLPE for HT and LT Cables shall
be complying with relevant IEC/VDE/BS/BDS standards.

**Properties of PVC Compound:**

<table>
<thead>
<tr>
<th>Thermoplastic PVC compound</th>
<th>Tensile Strength Before Ageing (kgf) min</th>
<th>Tensile Strength After Ageing at 80+2°C for 7 days (kgf) min</th>
<th>Difference after ageing % max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation mixture (LT Cables)</td>
<td>125</td>
<td>125</td>
<td>25</td>
</tr>
<tr>
<td>Insulation mixture (HT Cables)</td>
<td>150</td>
<td>150</td>
<td>25</td>
</tr>
<tr>
<td>Sheath mixture</td>
<td>100</td>
<td>100</td>
<td>25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thermoplastic PVC compound</th>
<th>Elongation Before Ageing % min</th>
<th>Elongation After Ageing at 80+2°C for 7 days % min</th>
<th>Difference after ageing % max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation mixture (LT Cables)</td>
<td>125</td>
<td>125</td>
<td>25</td>
</tr>
<tr>
<td>Insulation mixture (HT Cables)</td>
<td>100</td>
<td>100</td>
<td>25</td>
</tr>
</tbody>
</table>
Sheath mixture | 150 | 150 | 25

### Thermal Stability at 200°C:

<table>
<thead>
<tr>
<th>Thermal Stability at 200°C</th>
<th>Thermoplastic PVC compound</th>
<th>Volume resistivity at 70°C Ohm.cm</th>
<th>Before Ageing % min</th>
<th>After Ageing % min</th>
<th>Deformation under pressure at 70°C. Depth of indentation % max</th>
<th>Heat Shock at 150°C</th>
<th>Shrinkage at 150°C % max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation mixture (LT Cables)</td>
<td>10</td>
<td>80</td>
<td>80</td>
<td>50</td>
<td>No Crack</td>
<td>No Crack</td>
<td>4</td>
</tr>
<tr>
<td>Insulation mixture (HT Cables)</td>
<td>10</td>
<td>120</td>
<td>120</td>
<td>50</td>
<td>No Crack</td>
<td>No Crack</td>
<td>4</td>
</tr>
<tr>
<td>Sheath mixture</td>
<td>-</td>
<td>40</td>
<td>40</td>
<td>50</td>
<td>No Crack</td>
<td>No Crack</td>
<td>-</td>
</tr>
</tbody>
</table>

**Marking and Code:** The Cables shall be marked and coded in accordance with BS, IEC, VDE or equivalent standards.

**Insulation Coordination:** The insulation of thermoplastic materials based on PVC or XLPE for HT and LT Cables shall comply with relevant IEC/VDE/BS/BDS standards. The insulation test voltage for Cables is as follows:

<table>
<thead>
<tr>
<th>Rated voltage of the cables, KV</th>
<th>Single phase test voltage, KV</th>
<th>Three phase test voltage, KV</th>
<th>Direct test voltage, KV</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6</td>
<td>4</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>3.5</td>
<td>11</td>
<td>11</td>
<td>33</td>
</tr>
<tr>
<td>5.8</td>
<td>17</td>
<td>17</td>
<td>51</td>
</tr>
</tbody>
</table>

**Technical Requirements:**

a) The Cable specified in the following items shall withstand the impulse levels and test voltages specified by the recommendations of IEC, as stipulated before. They must be capable of carrying the short time current for three seconds and must withstand the short circuit (Peak value) current.

b) The cable must be designed accordingly in order to withstand the mechanical short circuit stresses.

c) They must contain all technical particulars which are mentioned in the Schedule of Technical Data.

d) The Owner reserves the right to have routine tests carried out on each type of equipment at the manufacturer’s factory in the presence of his representative.

e) The single bars shall be marked by the colors as per IEC, VDE or BS standard.

3.1.1.17. **Drawing:**

Bidder shall submit a complete layout plane and Single Line Diagram (SLD) of the proposed substation before starting work. Bidder shall also submit as build drawing after successful commissioning of the proposed substation.

3.1.2. **Technical Specifications**

3.1.2.1. **Dropout Fuse:**

The 11KV dropout fuse assembly shall be complete with mounting frame and shall be installed on the local electricity authority's distribution pole. It shall be of the following type:

- Rated Voltage (Nominal) : 11KV
- Rated Voltage (Maximum) : 12.5 KV
### 3.1.2.2. Lightning Arrester:

The lightning arrester shall be of the following specifications:

- **Rated Voltage (Nominal):** 11KV
- **Rated Voltage (Maximum):** 12.7 KV
- **Frequency:** 50Hz
- **Nominal discharge current:** 5KA
- **Symmetric fault current (min):** 20KA
- **Minimum spark over(RMS):** 14KV
- **Maximum spark over(RMS):** 40KV
- **Maximum impulse spark(crest):**
- **With stand test Voltage:**
  - Dry, 1 min: 28KV
  - Wet 10 Sec: 24KV

The lightning arrester shall be pole mounted type complete with mounting frame and all other accessories. The work shall be complete with supply and installation of necessary earth rod (40 feet long 1 1/2 inch GI pipe buried in ground) earth chamber 70mm² PVC insulated cable (green yellow color) from lightning arrester to earth rod and 25mm diameter, 3.0meter long G.I. pipe for the protection of earth conductor with the pole (2.5m above ground and 0.5meter below ground).

### 3.1.2.3. 11KV Automatic Voltage Regulator

Supply of Type Tested 11KV Automatic Voltage Regulators according to NEMA and ANSI C57.12.31 or equivalent standards and shall meet latest requirements of BPDB/Local Power Supply Authority.

Automatic Voltage Regulators shall be type tested 200A at 6.35KV Single Phase in sealed tank design with digital Control panel, Ground clamps & standard accessories and as per following technical data/specification. (1set = 3nos). 11KV AVR shall be from USA/EU/Japan or equivalent with relevant authorization, technical offer, technical catalogue, warrantee & guarantee, type test certificate etc from manufacturer.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current</td>
<td>200A at 6.35KV</td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>11KV, 3phase/ 6.35KV, 1Phase</td>
</tr>
<tr>
<td>Output Voltage</td>
<td>11KV, 3 phase</td>
</tr>
<tr>
<td>Frequency</td>
<td>50Hz</td>
</tr>
<tr>
<td>Basic insulation level (BIL)</td>
<td>95KV</td>
</tr>
<tr>
<td>Rated range of regulation</td>
<td>±10% in 32 steps of approximately 0.625% each</td>
</tr>
<tr>
<td>Sealed Tank Design</td>
<td>Yes</td>
</tr>
<tr>
<td>Cooling</td>
<td>Self</td>
</tr>
<tr>
<td>Surge Protective Device</td>
<td>10KA, 9KV</td>
</tr>
<tr>
<td>Temperature rise</td>
<td>Up to 65°C without increase the oxidation rate of oil</td>
</tr>
<tr>
<td>Control Panel</td>
<td>Micro-processor based digital</td>
</tr>
<tr>
<td>Accuracy class of regulator control panel</td>
<td>Class -1</td>
</tr>
<tr>
<td>Installation</td>
<td>Indoor/outdoor</td>
</tr>
<tr>
<td>Non-PCB oil for the voltage regulator</td>
<td>Yes</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP23</td>
</tr>
</tbody>
</table>

The control cabinet shall have the 230V~240VAC, 50Hz test input voltage for testing the regulator with external power supply.
In addition the regulator shall be supplied with the following spares:
   6.0 Nos. fuses
   2.0 Nos. position indicator glass.
   6.0 Nos. oil sight glass

3.1.2.4. High Tension (HT) Switchgear:
High Tension (HT) Switchgear shall be type tested & factory assembled (must having ISO-9001:2008) confirming to IEC 298/694 High Voltage(11KV) 1(0ne) Set (1 set = 3Nos ) Switchgear of sheet steel clad (14SWG) dust & vermin proof, free-standing, floor mounting completely with powder coated painting 11KV, 25KA, 50Hz, 3-phase indoor type high tension switchgear panel. The switchgear shall be inclusive of withdraw able type VCB, CT, PT, relay, ammeter, voltmeter, energy meter, 800Amps hard-drawn electrolytic copper busbars, interlocked earth switch, internal wiring etc all equipment and accessories complete as per standard and instruction of Engineer in charge. The switchgear must comply with the requirement of BPDB and relevant local authority. The HT switchgear shall be from reputed manufacturer of Siemens /ABB / Eaton / Schneider or its equivalent & approved quality in accordance with UL/NEMA/ IEC/ VDE/ BS/ JIS standards.

High Tension (HT) Switchgear should suitable for local power supply and climatic condition.

Technical Requirement: High Tension (HT) Switchgear shall be prefabricated, complete ad ready for erection and suitable for installation. The 11KV (HT) switchgear shall comply with the requirement of IEC 298/694 or equivalent UL/IEC.

Cubicle:
The cubicle shall be of sheet steel clad (14SWG) dust & vermin proof, free-standing, floor mounting completely with powder coated painting. All Components shall arrange & install as per IEC requirements. Bidder shall have to submit GA drawing/diagram.

Bus-bar shall be installed with rigid, non tracking, nonflammable and non hygroscopic insulating supports capable of withstanding the magnetic forces imposed by short circuit current. Provision shall be made for bus expansion, to prevent undesirable or destructive mechanical strain in the bus supports and connection. Switchgear bus shall have copper bar, designed to carry the rated current, operating at maximum future rating of transformer without exceeding temperature rise requirements.
The Bus-bar shall be marked for phase, neutral and earth by color as per IEC, VDE or BS standard. Each circuit breaker compartment will be provided with space heater to prevent condensation of moisture.
There shall be proper arrangement for both incoming and outgoing feeder.

Vacuum Circuit Breaker: The circuit breaker shall comply with VDE specification 0670 Part 102, IEC recommendation and publication 56, IEC 695, BS 116 and UL listing certificate.

Technical data for Circuit Breaker
The vacuum circuit breaker shall be withdrawable type and their technical data as a minimum are as follows:

<table>
<thead>
<tr>
<th>Nominal system Voltage</th>
<th>: 11KV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Normal current</td>
<td>: 630A(min)</td>
</tr>
<tr>
<td>No of phase</td>
<td>: 03</td>
</tr>
<tr>
<td>Frequency</td>
<td>: 50Hz</td>
</tr>
<tr>
<td>Rated shorts circuits breaking current</td>
<td>: 25KA</td>
</tr>
<tr>
<td>Rated shorts circuits current duration</td>
<td>: 3 Sec</td>
</tr>
<tr>
<td>Rated shorts making current</td>
<td>: 50KA</td>
</tr>
<tr>
<td>DC component of rated shorts breaking current</td>
<td>: 36%</td>
</tr>
</tbody>
</table>
Counters shall be provided to count the number of operation shunt release 6 No+6NC contacts shall be provided. Catalogue and warrantee certificate for VCB along with the tender.

**Earth Switch:** The Switchgear shall be provided with earth switch to be interlocked with VCB. The earth switch shall comply with requirement of standards.

**Current Transformer (CT):** Current transformer must comply with BS 3938, VDE 0414 and IEC 185. The C.T. should be cast resin insulated with class 10P10 for protection and class 0.5 for metering. The rated over current factor and burden should be matching with operating burden of the connected equipment to prevent the instruments from being damaged.

**Potential Transformer:** Potential transformer must comply with IEC 186. The P.T. should be cast resin insulated with class 0.5 for metering and class 1 for protection and burden minimum 50VA. The P.T. Secondary shall be protected with MCB

**IDMT Relay:** The relay for over current and faults protection should be of solid state (microprocessor operated). Minimum setting for current, earth fault and short circuit protection including the AC/DC converter should be fitted on a draw-out Double Europe Format (DEF) module. The draw-out module can be housed in a standard case, in which the module is plugged, should have one screw and one snap-On each terminal for the plant connections. The heavy duty current plug connector should provide automatic shorting of the C.T. circuits whenever the module is withdrawn. A make-before-break earth contact should be there to ensure protective earthing, before the other plug connections can be made. The relay should be suitable for D.C. shut tripping to be operated by 110V D.C. voltage from P.T. secondary through a rectifier or 12/24V D.C. through a capacitor rectifier circuit.

**Wiring and Instrumentation**
- a) Wiring cable size inside the cubicles shall be minimum 1.5mm² and with tinned copper conductors. Current circuits shall be made with minimum 2.0 mm² and with tinned copper conductors.
- b) The HT switchgear shall have voltmeter, ammeter, frequency meter and all other meters and indicating lamps as per design and standard.
- c) All cubicles, frames, transformer, measuring and relay circuits shall have protective earthing with provision for external earth connection.
- d) HT circuit breaker shall be provided with record for its operation.
- e) The protection system shall be consists of over current and earth fault protection.
- f) The bidder shall enclose details of system they proposed along with single line diagram, GA diagram, detailed technical specification, manufactures catalogue and mode of operation of protection system, with their offer.
- g) Complete physical dimensions and electrical characteristics of the equipment offered shall be furnished along with the Offer.

### 3.1.2.5. Three Phase Dry-Type Transformer with Enclosure:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated lightning impulse withstand voltage</td>
<td>75KV</td>
</tr>
<tr>
<td>Rated frequency withstand Voltage(60 sec)</td>
<td>28KV</td>
</tr>
<tr>
<td>No of operation cycles at the normal current</td>
<td>20,000/10,000</td>
</tr>
<tr>
<td>No of operation cycles at the short circuit current</td>
<td>100/25</td>
</tr>
</tbody>
</table>
Transformer shall be dry type cast resin, natural air cooled, type tested, 3-phase, 50Hz, 11KV/0.415KV & 0.24 KV indoor type distribution transformer from internationally recognised manufacturer (ISO9001 certified) conformity to IEC 60076/11 of DYn11 vector group having percentage impedance 4-6%, basic impulse insulation level 75 KV, HV & LV bushings, manual 5 position standard tap changer, complete with two windings of high conductivity aluminium foil with insulation material in class H, earthing terminals, temperature sensor with thermometer, thermostat controlled blower fan (if required), lifting lugs, data plate etc. complete as required with maximum 100°C temperature rise and suitable for operation at 40°C ambient temperature. Transformer manufactured & tested in accordance with relevant NEMA / IEC / VDE / BS / JIS standards.

**Specification (1250 KVA):**

<table>
<thead>
<tr>
<th>Installation</th>
<th>Indoor Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Capacity</td>
<td>1250KVA</td>
</tr>
<tr>
<td>Rated frequency:</td>
<td>50Hz</td>
</tr>
<tr>
<td>Rated Primary Voltage</td>
<td>11KV</td>
</tr>
<tr>
<td>Rated secondary</td>
<td>400 to 433 V phase to phase</td>
</tr>
<tr>
<td>HV Tapping</td>
<td>Tapping ± 2x2.5% of constant KVA output on HV Off-load manually operated tap changer.</td>
</tr>
<tr>
<td>Vector group</td>
<td>DYn11(Delta, star neutral brought out)</td>
</tr>
<tr>
<td>Terminals</td>
<td>Terminal: HT &amp; LT to be brought out in separate terminals. HT suitable for XLPE/PVC cable of maximum 185mm2 &amp; LT suitable for required Nos./size cable connection.</td>
</tr>
<tr>
<td>L.V. neutral</td>
<td>Brought out</td>
</tr>
<tr>
<td>BIL (HT)</td>
<td>75KV</td>
</tr>
<tr>
<td>Maximum system Voltage</td>
<td>12KV(HT side), 0.50KV (LT side)</td>
</tr>
<tr>
<td>% impedance</td>
<td>4-6%</td>
</tr>
<tr>
<td>No load current (%)</td>
<td>1.00A(max)</td>
</tr>
<tr>
<td>Switching current</td>
<td>le/ln(peak value) 9A (max)</td>
</tr>
<tr>
<td>Time constant</td>
<td>0.42(max)</td>
</tr>
<tr>
<td>Noise Level</td>
<td>60dB (max) at 1meter</td>
</tr>
<tr>
<td>Cooling system</td>
<td>Air Natural</td>
</tr>
<tr>
<td>No load loss</td>
<td>2800 watts (max)</td>
</tr>
<tr>
<td>Full load loss at 75°C</td>
<td>13500watts(max)</td>
</tr>
<tr>
<td>Efficiency(%)</td>
<td></td>
</tr>
<tr>
<td>Load 100% cosφ=0.8 at 120°C</td>
<td>Minimum 98.80%</td>
</tr>
<tr>
<td>Load 75% cosφ=0.8 at 120°C</td>
<td>Minimum 99.00%</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP 20</td>
</tr>
<tr>
<td>Enclosure</td>
<td>IP31 metal enclosure</td>
</tr>
<tr>
<td>Clearance of enclosure at HT side 500mm (minimum) at other side 200mm (minimum )</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>IEC 60076/11</td>
</tr>
<tr>
<td>Ambient Classes compliance</td>
<td>E2 C2 F1</td>
</tr>
</tbody>
</table>

**Insulation:** The transformer shall be manufacture with class H insulation on the high tension side (permissible average winding temperature rise 100K) and class F on low tension side (permissible average winding temperature rise 100K). The transformer shall be supplied with a degree of protection IP 20.

**Performance:** The guaranteed value shall conform to the tolerance specified in VDE 57532, VDE 0532 part 1 or IEC 726. The following electrical performance data as a minimum shall be furnished by the bidder for working at rated voltage, frequency, unity P.F. and at 75°C

1. Exiting current -in %
2. No load loss - at rated voltage and frequency.
3. Full load loss (including supplementary eddy current loss) at continuous rated current and for winding 40°C ambient temperature with tap changer in middle position.
4. Load loss at half load -in KW
5. Voltage regulation in %
6. Efficiency in %
7. Impedance voltage in % (at tap changer in middle position)
8. Noise level
9. Total weight of Transformer in KG
10. A drawing showing general arrangement and outline dimensions.
11. Rated no load current (RMS value referred to rated current)
12. Type of winding and conductor materials.
13. Class of insulation.
14. Temperature after rated load at 40°C ambient temperature
   - In winding
   - In core
15. One minute double power frequency withstand test voltage applied to
   - HV line terminal
   - LV line terminal
   - Neutral
16. Impulse test voltage 1.2/50 micro sec full wave positive and negative polarity applied to:
   - HV line terminal
   - LV line terminal
   - Neutral

The basic insulation level for H.T. side should be 75KV and L.T. side should be 2.5KV. Maximum allowable system voltage for H.T. side should be 12.5KV and L.T. side would be 0.50KV.

**Iron Core**
The three phase limbs of the iron core shall be arrange in the same plan and interconnected by yokes. The core shall consist of grain oriented laminations which will be insulated on both sides. The core shall limb laminations shall be mitered at the joints to the yoke.

**Windings:**

1) **High tension winding**
   a) The high tension coils should be would together with a high grade insulation sheet from aluminum strip and potted under vacuum up to the terminals.
   b) The external insulation shall comprise of mixture of epoxy resin quartz powder to make the winding maintenance free, damp proof and suitable for service in the tropical atmosphere like Bangladesh.
   c) Re-connectable tapping links in the high-tension winding shall permit adjustable to the system condition. They shall be mounted on the low-voltage side of the transformer.

2) **Low tension winding**
   Aluminum shall be used for low-tension strip winding. The width of the aluminum strip shall be equal to the coil length to considerably reduce the axial short circuit forces. The conductor and insulating material shall be bonded together by heat treatment and from a compact unit which will be sealed against moisture.

3) **Winding clamping**
   A clamping frame shall hold the iron core and coils together. The coils shall be supported by resilient spacer blocks, which shall provide effective coil to coil and core to core damping.
Lifting eyes and earthing bolts will be fitted to the top and bottom clamping frame members respectively.

4) **Temperature monitoring**
   a) The temperature monitoring system shall protect the transformer winding against overheating due to increase ambient temperature or overload and shall permit utilization of the full transformer power at any required load cycle without hazard to the transformer.
   b) The transformer shall be fitted with two temperature monitoring systems as standard equipment. One shall be connected to give an alarm and the other for tripping. The response temperature difference between the two systems shall be 20° K.
   c) The tripping unit required for the monitoring system shall be located in the medium or low voltage distribution cubicles.

5) **Time delay relay.**
   As the control supply for the temperature monitoring system will be taken from the secondary side of the protected transformer, it will be necessary to incorporate a time delay relay. This relay shall be bridge the time that elapses from the instant of transformer switch on unit to the relay in the tripping unit picks up and will interrupt the tripping circuit.

6) **Temperature sensor.**
   a) The response temperature of the sensor shall be selected by the manufacturer according to the class of insulation involved and the mounting position in the winding. The sensors shall be connected to terminals mounted on the top of the clamping frame.
   b) The temperature sensors shall be temperature sensitive resistors connected in series and shall be embedded in the three low tension windings. A specific increase in their resistance shall cause the contacts to operate (1 NO +1NC).

7) **Noise.**
   Specific design measure shall reduce the noise level of cast resin dry type transformer.

8) **Terminals connection.**
   **High Voltage:** As special safety, precaution shall be required against accidental contact with live parts; the terminals link strip shall be equipped with contacts to receive cable lugs. All unquoted and live metal parts on the tension side of the transformer shall be protected with flame inhibiting polycarbonate.
   **Low Voltage:** The low tension phase and neutral terminals shall be arranged at the top for cable connection as per design.

9) **Terminals connection.**
   The brought out transformer neutral shall be solidly earthed by PVC insulated and PVC sheathed cable to the separately earth pit as per design.

10) **Structure borne noise suppression.**
    The transformer shall have structure borne noise reduction unit and it will be a metal/rubber element, which shall be shaped to security anchor the transformer at the point of installation.

11) **Truck**
    The transformer shall be equipped with a truck with plain wheels for travel lengthways or sideways. The truck shall be bolted to the lower clamping frame members and shall have four towing eyes.

3.1.2.6. **Low Tension (LT) Switchgear:**
    Low Tension (LT) Switchgear shall be of 415 V, 3-phase, 50 Hz, indoor type Low Tension (LT) switch-gear from recognised manufacturer(ISO9001 conformity to relevant IEC standard of sheet steel clad (14SWG) dust & vermin proof, free-standing, floor mounting, epoxy resin powder coat painted cabinet as per accepted/approved by the Engineer. LT Switchgears shall complete with digital voltmeter & ammeter both with multifunction selection, indicating lamps for ON – OFF & Trip, 1.2A/sq.mm hard drawn electrolytic copper busbar and shall be manufactured from ABB / Siemens
/Eaton/ Schneider or equivalent according to relevant UL/NEMA/VDE/IEC/JIS/BS Standards and shall have type test certificate according to relevant IEC Standard. The switchgear shall conform to the following data:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>415V</td>
</tr>
<tr>
<td>Frequency</td>
<td>50Hz</td>
</tr>
<tr>
<td>Number of bus bars</td>
<td>5(L1, L2, L3 N&amp;PE)</td>
</tr>
<tr>
<td>Bus bar materials</td>
<td>Copper(HDBC)</td>
</tr>
<tr>
<td>Degree of protection of Bus bar chamber</td>
<td>IP41</td>
</tr>
<tr>
<td>Maximum Protective current</td>
<td>80KA</td>
</tr>
<tr>
<td>Rated short circuit withstand current of Bus bar</td>
<td>40KA</td>
</tr>
<tr>
<td>Maximum protective peak current of Bus bar</td>
<td>17KA</td>
</tr>
<tr>
<td>Rated impulse withstand voltage</td>
<td>8KV</td>
</tr>
<tr>
<td>Rated insulation voltage</td>
<td>1000V</td>
</tr>
</tbody>
</table>

The switchgear shall be designed to withstand internal arcing faults conforming to symmetrical short circuit current of 50KA, for one second as a minimum. All parts of the switchgear including apparatus shall be designed to withstand without being damaged, the mechanical and thermal strain of the prospective short circuit current or, where protected by circuit breaker, the interrupting current of the circuit breaker.

As type and routine tests laid down in IEC form the basis for verifying the characteristics of tested switchgear assemblies, the bidder shall be submit the necessary type test results of the proposed LT switchgear. Routine tests shall be done in the factory in presence of the Owner representative. For assembly of LT switchgear, the following measures are to be as a minimum.

a) All cables, feeders, buses shall be provided with approved type of identification
b) Outgoing and incoming cables shall be arrange in separate spacious cable chambers.
c) Protective screens shall be arranged between main bus-bars and cable space.
d) Terminals for power cable shall be protected against accidental touch.
e) Interior control wiring shall be accommodated in flexible plastic conduits,
f) Wiring inside the cubicles shall be made with minimum 1.5mm² and with tinned copper conductors.
g) The switchgear shall be arranged strictly in accordance with the layout drawing and direction of Engineer.
h) The switchgear shall be suitable for additional space of approximately 20% for future extension.
i) The switchgear shall be of modular type design. The apparatus of each function group shall be assembled on a common base

**Cubicle**

a) Cubicle shall be of sheet steel clad (14SWG) dust & vermin proof, free-standing, floor mounting, epoxy resin powder coat painted cabinet as per IEC regulation and accepted/approved by the Engineer.
b) The electrical equipment inside the panel shall be finger proof.
c) Cubicles shall be of frame structure fully metal enclosed internal substation in to
   - Bus-bar compartment
   - Equipment compartment
   - Cable compartment,
d) Each vertical compartment shall be furnished with space heater to prevent condensation of moisture.
**Cable Entry and termination:**
All cable to be connected to the panels shall come from bottom. The cable compartment shall have enough space for all incoming and outgoing cables and also for its assembly and maintenance of panels.
The bottom plate shall have be split and removable type to facilitate cable entry. Plate for cable glands for incoming and outgoing cables is to be provided with accessories.

**Bus-bar (Main and secondary)**
The Bus-bar shall be installed with rigid non-tracking, nonflammable and non-hygroscopic insulating supports capable to withstand magnetic forces imposed by short circuit at least equal to the interrupting of the switchgear bus main breaker. The switchgear bus-bar shall be of solid copper designed to carry continuous the rated current, operating at its maximum future rating, without exceeding temperature rise requirement specified in referenced standards. All joints in Bus-bar shall have non oxidizing contact surfaces minimum contact resistance and shall be insulated with removable fittings, which will provide insulation at least equal to that of the bus-bar insulation. The bus-bar shall be manufactured and tested to comply with BS 159 or equivalent international standard to withstand a fault level of 65KA r.m.s for one second.

**Ground Bus:** An uninstalled copper ground bus shall be furnished throughout the entire length of the switchgear and connected to the transformer neutral. All switchgear equipment requiring grounding shall be connected to this bus. Copper cross section of ground bus shall not be less than half of phase bus. The ground bus shall be connected with the earth pits as per design and direction of Engineer in charge.

**Circuit Breaker**

a) The circuit breaker shall comply with IEC157, BS4752 with horizontal isolation.

b) The ACB/MCCB shall be quick break, trip free, indicating type and shall have inverse time characteristics with adjustable (above 100Amp) overload, short circuit and instantaneous magnetic trip element functioning on overload the above the normal operating range. All circuit breakers shall be trip free. ACBs shall be motorized operated type and microprocessor controlled. TPMCCB above capacity 500Amps shall be electronic microprocessor based or as per schedule of works.

c) Each breaker shall be capable of carrying rated full load current continuous without exceeding the temperature rise specified in the referenced IEC standard. Circuit breaker insulation shall be coordinated with that of the switchgear structure and shall be designed for use on a 600volt system. All circuit breaker lugs shall be of solder less mechanical type.

d) Breaker main contact surfaces and all secondary device contact surfaces shall be silver to silver, designed and fabricated to be self-aligning and to resist burning and decoration.

e) All breakers of L.T. switchgear system shall be of same manufacturer.

f) Padlocking facilities shall be provided for main incoming circuit breakers, bus coupler and all main circuit breakers in local panels.

g) All main breakers shall be equipped with solid state phase over current tripping devices to provide interchangeable and independently adjustable over current and short circuit protection. Trip settings will be coordinated to provide selective trip over current protection. The Bidder shall furnish tripping devices with characteristics and trip ranges, which will permit this co-ordination.

h) The MCCB's shall have the following minimum symmetrical interrupting capacity as per B.S. (as per Schedule of Requirements) and IEC at 415 VAC, if not indicated otherwise:

<table>
<thead>
<tr>
<th>Current Range</th>
<th>Interrupting Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 100A TP</td>
<td>16KA</td>
</tr>
<tr>
<td>101A TP to 200A TP</td>
<td>25KA</td>
</tr>
<tr>
<td>201A TP to 630A TP</td>
<td>35KA</td>
</tr>
<tr>
<td>Above 630A TP</td>
<td>65KA</td>
</tr>
</tbody>
</table>
Circuit breaker (ACB/MCCB) shall be manufactured from ABB / Siemens / Eaton/ Schneider or equivalent according to relevant UL/NEMA/VDE/IEC/JIS/BS Standards and from USA, EU, Japan or equivalent. Bidder shall submit type test certificate, country of origin certificate, catalogue and warrantee certificate for all circuit breaker.

**Current Transformer:** All current transformers shall comply with IEC 185, BS3933 and shall be suitable class, rating and accuracy depending on duty. The LT switchgear shall be complete with all meters indicators, switches, relays, and so on as per design standard and direction of Engineer in charge.

**3.1.2.7. Sub Distribution Board:**
Supply, installation, testing & commissioning of insulated distribution boards with insulated cover & conforming to IEC439-1&2 from reputed manufacturers having ISO9001 certificate housing the following rated MCB/ELCB/MCCB/MPCB, contactors, busbars and all other accessories as per Schedule of Requirements and direction of Engineer in charge.

**3.1.2.8. Automatic PFI Plants:**
Automatic PFI Plants 415 V, 3-phase, 50 Hz, indoor type power factor improvement panel from recognised manufacturer(ISO 9001 certified) conformity to relevant IEC standard of sheet steel clad (14SWG) dust & vermin proof, free-standing, floor mounting, epoxy resin powder coat painted cabinet as per accepted/approved by the Engineer. PFI Panel shall complete with TP busbars and earth block, micro processor controlled auto power factor correction relay with digital PF reading display, capacitor Bank, contactor, fuse, ON-OFF indicators for every stage of capacitor Bank (except directly connected one) etc. Major components shall be manufactured from ABB/ Siemens/ Eaton/ Schneider/ Moeller/Frako or equivalent according to relevant UL/NEMA/VDE/IEC/JIS/BS Standards and shall have type test certificate according to relevant IEC Standards and as per accepted/approved by the Engineer. Bidder must be submitted relevant document in support regarding major components. Combined PF shall be 0.95 to 0.99 or 1 in working day, holiday & mid-night, so that no penalty from BPDB/local power supply authority shall be accepted by the Client.

**Construction:** The metalized dielectric capacitors should be constructed as follows:

a) The metalized coating to be vapor-deposited on a plastic folium. The folium should act both as a support and dielectric. The capacitors should be of single wound section design; i.e., the section for each of the three phase should be wound round the core successively and isolated by a separator folium. The would section is to be fitted in a aluminum jacket.

b) The capacitor shall not contain any liquid impregnate. They shall be with SF$_6$ or N$_2$ gas to stop entrapped air from oxidizing the vapor deposited inside in order to improve life expectancy, capacitance stability overload capacity and switching durability.

**Operating characteristics**
Capacitors shall have the following operating characteristics:

- High reliability
- High overload capacity (1.5x rated current for harmonic loading)
- High capacitance stability
- High switching durability
- High temperature class (ambient temp. up to +55°C)
- Long life expectance
- Touch-proof terminals
- Low losses
- Maximum up to 0.2w/KVAR at terminals
- Self heating: Switching peaks may overload capacitors and lead to flash -over in the dielectric. The resultant arc evaporates the metalized layer near the puncture. Fault points in the dielectric should be isolated and the capacitor can continue operating without any trouble.
- Easy to installed, operation, inspection etc.
- Low weight

**Regulation:** The capacitors shall be in the compliance with requirement with following regulations:
- DIN EN 60831-1
- IEC 70
- IEC 831-1

**Technical Data**

The PFI plant shall comply with the following technical data as a minimum:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>415V</td>
</tr>
<tr>
<td>Max permissible operating voltage</td>
<td>460V</td>
</tr>
<tr>
<td>Max. permissible current</td>
<td>1.5x rated current</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>50Hz</td>
</tr>
<tr>
<td>Capacitance tolerances</td>
<td>-5% to +10%</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP54</td>
</tr>
<tr>
<td>Foil/Foil test voltage</td>
<td>AC test with 2.15x rated voltage</td>
</tr>
<tr>
<td>Foil/enclosure test voltage</td>
<td>3KV</td>
</tr>
<tr>
<td>Life time</td>
<td>Min 80000 hours</td>
</tr>
<tr>
<td>Cooling</td>
<td>Self cooled</td>
</tr>
<tr>
<td>Housing/color</td>
<td>Ral 7032 (light gray) Electrotating applaud epoxy powder coating</td>
</tr>
</tbody>
</table>

Details of capacitors such as manufacturer's catalogue, operation and maintenance manual, type test certificate etc. must be submitted with the offer.

**Power Factor Correction Relay Construction:** The digital type controller should be fitted in housing for door mounting. Degree of protection should be IP54 (front) and IP20 (rear), safe to touch. The front should have two operating button and a measured value display. The terminals and their diagram should be on the rear side.

**Connection:** The controller should be suitable for system voltages from 200 to 690V at 50Hz & for 1A & 5A current transformers. The control voltage is in all cases 230V (-15 to +20%).

**Automatic setting of the set point range**
The controller shall have self adaptation facility. Self adaptation means that it is no longer necessary to set the c/k value (c: power rating of the first capacitor Bank, k : transformation ratio of the current transformer) during commissioning of the control unit, after plant expansion or when a current transformer is modified. A maximum of 6 capacitor branches can be controlled in any order via 6 output relays (indication by LED's). Two further output terminals can be used for fault indication (P.F. too low or too high ).
Technical data for PFC relay
The PFC shall comply with following technical data as a minimum:

<table>
<thead>
<tr>
<th>Standard</th>
<th>DIN VDE 0106, 0160 IEC 0348</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Voltage</td>
<td>200V to 690V</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>230(±10%)</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>50Hz</td>
</tr>
<tr>
<td>Consumption</td>
<td>2VA</td>
</tr>
<tr>
<td>No of steps</td>
<td>Max 31 at step function ratio 1, 2, 4, 8, 16</td>
</tr>
<tr>
<td>Step function ratio</td>
<td>Variable</td>
</tr>
<tr>
<td>Response time (increase)</td>
<td>30 second</td>
</tr>
<tr>
<td>Response time (decrease)</td>
<td>3 second</td>
</tr>
<tr>
<td>Expansion of response time</td>
<td>Under fast changing load situation the response to be delayed to 2/3 min.</td>
</tr>
<tr>
<td>C/K value</td>
<td>Automatic adjusted in the controller range</td>
</tr>
<tr>
<td>Housing of relay</td>
<td>Duroplast IP20</td>
</tr>
<tr>
<td>Connection</td>
<td>Wire terminals(SIGUT)</td>
</tr>
<tr>
<td>Ambient temp</td>
<td>40º C</td>
</tr>
<tr>
<td>Altitude</td>
<td>Up to 1000m above sea level</td>
</tr>
</tbody>
</table>

Display: In automatic operation of the PFI plant, the following measured variables must be shown on the display.
- Cos phi(PF)
- Apparent current(A)
- Measuring circuit Voltage(V)
- Active power(KW)
- Apparent power(KVR)
- Reactive power actual(KVAR)
- Harmonic Voltage

The Magnetic Bidder of PFI unit shall incorporate following technical data

<table>
<thead>
<tr>
<th>Insulation rating</th>
<th>750 Volt(minimum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature</td>
<td>25ºC to 55ºC</td>
</tr>
<tr>
<td>Coil Voltage tolerances</td>
<td>0.85 to 1.15 times rated control voltage</td>
</tr>
<tr>
<td>Switching frequency in make/break operations per hour when switching on to discharged capacitors</td>
<td>90</td>
</tr>
<tr>
<td>Contact endurance(make/break operations)</td>
<td>:</td>
</tr>
</tbody>
</table>

Discharge Coil: The coils should be suitable for discharging of capacitor Banks in less than 5 second

LV HRC fuse
a) HRC fuses with non insulated gripping lugs shall comply with DIN, VDE 0636 and IEC 269 and shall have breaking capacity 120KA. Dimension of HRC fuse should be in conforming to DIN 43620.
b) Major Components (Capacitor, Magnetic Contactor, MCCB) shall be manufactured from ABB/ Siemens/Eaton/Schneider/Fargo or equivalent according to relevant UL/NEMA/VDE/ IEC/ JIS/ BS Standards and from USA, EU, Japan or equivalent.
c) Bidder shall submit type test certificate, country of origin certificate, catalogue and warrantee certificate.
3.1.2.9. 11 KV Bypass Switch:
11 KV Bypass Switch shall be of sheet steel clad, dust & vermin proof, free standing, floor mounting, indoor type 11KV By-pass switch panels (minimum 3nos) having self quenching, single phase, two position device 3sets LBS type with 25KA (3sec) and isolating or de-energizing of 11KV Auto Voltage Regulator as per following technical data/ specification and complete with all standard accessories manufactured and tested as per NEMA/IEC/VDE/BS/JIS standards accepted/approved by the Engineer. 11KV Bypass Switch shall be from USA/EU/Japan or equivalent with relevant authorization, technical offer, technical catalogue, warrantee & guarantee etc from manufacturer. (1set=3nos) & Surge Arrester.

<table>
<thead>
<tr>
<th>Maximum Design Voltage</th>
<th>15.5KV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Insulation Level (BIL)</td>
<td>95KV</td>
</tr>
<tr>
<td>Rated Continuous current</td>
<td>630A</td>
</tr>
<tr>
<td>Momentary rating: Disconnect blades</td>
<td>40KV</td>
</tr>
<tr>
<td>By pass blade</td>
<td>30KV</td>
</tr>
<tr>
<td>IP Rating</td>
<td>23</td>
</tr>
</tbody>
</table>

3.1.2.10. HT Cable Work:
Providing and laying of 11KV, 3x185sq.mm XPLE insulated HT cable through cable trench with required material except termination kit as per approved by the Engineer in charge.

**HT XLPE Cables Construction**

**Conductor:** The Conductor is Plain annealed stranded and compacted round Copper in accordance with IEC-60228. Compacting of conductor improves its current carrying capacity, reduces losses and reduces overall cable diameter.

**Conductor Screen:** An extruded tight fitting layer of Semi-conducting is provided over the copper conductor as the provisions of IEC-60502-2.

**Insulation:** The insulation is Cross-linked polyethylene (XLPE) applied by extrusion as per IEC-60502-2.

**Insulation Screen:** An extruded tight fitting layer of Semi-conducting is provided over the XLPE insulation as the provisions of IEC-60502-2.

**Metallic Screen:** A metallic screen of copper is provided over insulation screen as per the provisions of IEC-60502-2.

**Inner Covering:** Inner covering of extruded or taped PVC is provided wherever applicable as per IEC-60502-2.

**Armour:** Armouring by Round wires or Flat wires or Double tapes. The material of armour for Single core is aluminum whereas, for multi-core cables it is Galvanized Sheet. Counter helix of Galvanized sheet tape is provided on request for round steel wire & Flat wire armoured cables. The armour is applied over the inner covering as per IEC-60502-2.

**Over Sheth:** Over sheath is of extruded PVC as per IEC-60502-2. Special properties for sheath can be provided on specific request, such as FRLS, anti-termite & anti-rodent, resistance to ultraviolet radiation etc.

3 Core Round/Flat Wire HT XLPE Cables
Type: 2xSEYRGY/2xSEYFGY/NYSEYFGbY
Voltage grade 6/10(12) KV.

Construction: Stranded copper conductor, extruded semi conducting conductor screen, XLPE insulation, extruded semi conducting insulation screen, metallic screen of copper, cores laid up with PVC fillers. Extruded PVC Inner covering, Galvanized steel Round/Flat wire armour with counter helix binder tape, PVC over sheathed.

3.1.2.11. Cable Kit:
Supply & fixing of heat shrink cable termination kit out-door / in-door use complete with DIN lugs earth connection hardware & cable preparation kit (In-door & outdoor) at the point of cable termination for 11 KV 3-core PVC insulated & PVC sheathed & armoured /non-armoured cable of 3x185sqmm as per Schedule of Requirements and direction of Engineer in charge.

3.1.2.12. LT Cable Work:
Providing and laying in floor trench fixing of PVC insulated and sheathed single core LT cable with The necessary cable termination KIT, Cable grand, PIB tape and other accessories as per Schedule of Requirements and direction of Engineer in charge.

Specification: Single/Multi-core low voltage cables shall be PVC/XLPE insulated, PVC sheathed armoured /non-armoured direct burial type, termite proof, made and tested according to relevant IEC/VDE/BS/BDS for this type of installation rated voltage being 600/1000V. LT cable shall be used for domestic wiring, control and power wiring.

BYA Cable:
Description: Plain annealed Stranded Copper conductor of 99.99% purity, PVC insulated single core cable.
Application: Suitable for use in surface mounted or cosseted PVC conduits or trunking. Also suitable for field protected installation in and appliances up to 1000 V a.c or up to 750 V to earth d.c.

NYY Cables
Description: Plain annealed Stranded Copper conductor of 99.99% purity, PVC insulated, PVC outer sheathed.
Application: Suitable for use in indoors, outdoors, underground and in water for continuous permissible service voltage of 720/1200 Volts.
Reference Standards: IEC-60502-1, VDE-0271, BDS-900 and BS: 600

XLPE Cables
Description: Plain annealed Stranded Copper conductor of 99.99% purity, XLPE insulated, PVC outer sheathed.
Application: Suitable for use in indoors, outdoors, underground and in water for continuous permissible service voltage of 720/1200 Volts.
Reference Standards: IEC-60502-1, VDE-0271, BDS-900 and BS: 600

Insulation Test:
Insulation test of the whole installation shall be carried out using Megger, in presence of authorised representative of the Consultant, and result submitted to the Consultant for approval. The Bidder shall
conduct the required tests with the help of the concerned department/authority and the costs of performing the tests should be included in the quoted rate.

3.1.2.13. **MS Sheet for indoor Trench:**
Supply, cutting and fittings of following MS Sheet for covering the Trench in Substation with 4.8 mm (3/16") thick MS sheet having necessary lifting lugs as required.

3.1.2.14. **Underground Cabling Wiring:**
Supply, installation, testing & commissioning of LT/HT cable with all related accessories as per Schedule of Requirements and direction of Engineer in charge.

3.1.2.15. **Surface Wiring:**
Supply, installation, testing & commissioning of LT cable with all related accessories as per Schedule of Requirements and direction of Engineer in charge.

3.1.2.16. **Installation Work:**
Installation, testing & commissioning of Different equipment as per Schedule of Requirements and direction of Engineer in charge.

**H.T. SWITCHGEAR & METERING PANEL:**
All standard checks of the equipment before installation shall be done by the Bidder and unit shall be installed and tested as per direction of the manufacturer and Engineering in Charge. Required finishing work shall be done by the Bidder and hooking up the unit with the system shall also be within this contract. Consumable materials required for complete installation of the equipment including cables compound, boxes etc. shall be supplied by the Bidder. After complete installation be unit shall be tested by the Bidder up to the satisfaction of the Engineer-in-charge.

All accessories shall be installed as per direction of the Manufacturer and the Consultants. If the equipment is damaged during handling and installation, The Bidder must repair the damage or replace the damaged parts at his own cost.

**TRANSFORMER/ HT AVR:**
The Transformer/HT AVR Equipment should be checked before installation by the Bidder and installed and tested as per direction of the Manufacturer and Engineer-in-charge.
Required finishing work shall be done by the Bidder and hooking up the transformer with the system shall also be within this contract. Consumable materials required for complete installation including cable compound boxes etc. shall be supplied by the Bidder and the rate quoted shall be inclusive of all incidental expenses. Care should be taken during carrying the transformer and its related parts. If there is any damage during handling and installation the Bidder will be liable to replace the damaged parts at his own expenses. After complete installation the transformer must be tested and commissioning as per direction of the Engineer-in-charge and Manufacturer.

**L.T. Switchgear:** All L.T. Gear equipment must be installed on proper foundation. All consumables required for the complete work shall be supplied by the Bidder. The work shall be complete with all internal electrical connections. After complete installation of the panel the Bidder should test the complete L.T. Gear equipment as per manufacturer specification and direction for full satisfaction of the Consultant/ and Engineer-in-charge.
Capacitor: The item includes supervision of installation of capacitor on prepared foundation. The foundation is to be prepared by Bidder as per direction of the Engineer-in-charge. All consumables required to install the equipment shall be supplied by the Bidder. After completion of the installation the Bidder should test the equipment in presence of Consultant/Engineer-in-charge to his satisfaction.

3.1.2.17. Earthing:
The work under this item shall consist of supply and installation of earth electrode with copper lead, earthing inspection pit and connecting to the specified terminal according to the drawing, specification and direction of the Engineer-in-charge. The whole electrical system including light, fan, regulator sockets sub-station and metal parts incorporated with building electrification shall be earthed.
The earth resistance of the electrodes system shall be to the satisfaction of the local supply authority and shall not exceed in one ohms.

Materials:
Earth Electrode:
The earth Electrode in a 1 and 1/2” dia, G.I. pipe with 3/16th inch. dia drilled holes.
The G.I. pipe shall be similar to the specification.
The pipe earth electrode shall be sunk and buried below ground level up to its full length or as advised by the Engineer-in-charge / Consultant. The earth lead and be connected to the earth electrode by brass/G.I. clamp. After making connection the clamp shall be covered with bitumen poured hot and with jute cloths.

Earth lead:
Earth lead shall consist of two numbers, 2 SWG high conductive electrolytic bare copper wire meeting the requirement of B.S.S. 6360: 1969 and/or it’s equivalent.
All earth lead shall follow the shortest and most direct route to the earth electrode avoiding sharp bend and from inspection pit to the entry at the building shall be enclosed in 1” dia G.I. pipe. The earth lead shall be connected to test earth electrodes by means of lugs, bolts, nuts and double washers to BE fixed as to make permanent and positive connections both electrically and mechanically. The joints shall be covered with PVC compound without disrupting the continuity.

Earth Inspection Pit: Inspection pit shall have to be constructed over earth electrode to inspect and test the connection terminals. bricks used shall be of Ist class and only approved quality cement shall be used, Jhama brick khoa for R.C.C. cover shall be 3/4th inch downgraded and washed, cleaned before casting. 3/8th inch dia M.S. Rods @ 4” c/c with two 1/2” dia M.S. Hook shall be provided in the cover slab.

Installation:
Electrode: The pipe earth electrode shall be sunk and buried below ground level up to its full length or as advised by the Engineer-in-charge / Consultant. The earth leads shall be connected to the earth electrode by silicon aluminum bronze body clamp and phosphor bronze screws. After making connection the clamp shall be covered with bitumen poured hot and with jute cloth.

Lead: All earth lead shall follow the shortest an most direct route to the earth electrode avoiding sharp bend and from inspection pit to the earth electrode avoiding sharp bend and from inspection pit to the entry at the building shall be enclosed in 1” dia water grade PVC pipe. The earth lead shall be connected test earth electrodes by means of lugs, bolts, nuts and double washers of failed as to make permanent and positive connections both electrically and mechanically. The joints shall be covered with PVC compound without disrupting the continuity.
**Pit:** 1st class brick made inspection pit and RCC cover with Sub-Station Set hook shall be built on earth electrode as per Schedule of Requirements and direction of Engineer in charge.

**Maximum Earth Loop Resistance:** The maximum earth loop resistance any point in the installation including earth lead to the earth electrodes shall not exceed the resistance specified in the schedule or that indicated by the Consultant. The Bidder must ensure that the leads are efficiently bonded to all metal work other than the current carrying parts so that the above resistance level is not exceeded. It will be the duty of the Bidder to provide earth tester, test the installation in presence of the authorized representative of the authority and submit earth test report to the authority for approval.

**Method of Measurement:** Measurement shall be per set of earthing system installed.

3.1.2.18. **Cross Arm and H Pole:**
Cross arm set for Lightning Arrestors installation including required H pole, all nuts, bolts, screw, washers, fixing MS angles, pole clams, Earthing MS spike, 2/0SWG HDBC conductors, uPVC pipes etc as per site requirement, instruction & direction of the Engineer-in-charge.

3.1.2.19. **Cable tray or ladder:**
Supply, fabrication, fitting, fixing of cable tray/ladder made of 16SWG galvanized sheet steel/angle bar, flat bar of approved quality of following sizes complete with necessary hangers, supports, cover junction box, hangers, clamps, bends, nuts, bolts, washer & all other accessories as per Schedule of Requirements and direction of Engineer in charge.

3.1.2.20. **Supply, Installation, Testing and Commissioning of 500 KVA Generator:**

**Introduction:** The offer covers the design, manufacturer, supply, installation, testing and commissioning as per latest engineering practice. The following parameters should under consideration:

| **General** | Ensure service continuity, high degree of safety, ensuring easy installation and reduced construction cost, be easily adaptable to site and hundred percent brand new goods |
| **Engine:** | Manufactured & assembled in accordance with NEMA/IEC/VDE/JIS standard & shall be fuel efficient one. |
| **Prime Power:** | 500 KVA at 40°C at 90% relative humidity with canopy |
| **Continuous power** | (80%+) of Prime power |
| **Efficiency:** | (80%+) of Prime power |
| **Load acceptance:** | Minimum 80% to 100% load acceptance at the rated capacity in single step during power off. with 300% Motor starting at low power factor (0.4 or lower) current. |
| **Harmonic distortion (THD):** | less than 4%. |
| **Standby Power:** | 110% of the declared prime power i.e 550 KVA for 1 hour every 12 hours of operation. OHV(Over Hand Valve engine). |
| **Transient performance:** | The generator set shall be suitable to accept single step load with acceptable voltage and frequency response on load addition or rejection as per NFPA. |
| **Governor:** | The electronic governor shall be supplied as per manufacturer's standard. |
| **Radiator:** | 40°C Ambient radiator and 90% humidity. |
### Alternator Details:

A Brushless alternator, self regulated, self-excited, salient pole, flexible coupling. P.F: 0.8, speed: 1500 rpm, frequency: 50Hz, 400/230V 3-Phase. Sealed solid state electronic regulator, class of insulation: H, temperature rise up to 125°C.

i) **Voltage regulation:** maintain voltage output to within ±1.5% at any power factor between 0.8 lagging and unity. At any variation from no load to full load at any variation from cold to hot. At speed drop variation up to 4.5%.

ii) Frequency regulation shall be ± 0.55% Isochronous under varying loads from no load to 100% load.

iii) Automatic main failure detection panel with auto start and auto load transfer facility having the following:

- Auto battery charger
- Mode selector switch manual/auto/off test
- Time for generator start delay, load transfer delay, genset clod run
- Voltmeter 0-500V main and generator set with selector switch
- Emergency push buttons
- A set of necessary control fuses
- Manual reset in the event of failure

### Details:

1. Voltage: 400/230 (± 1.50%)
2. Electric starting system
3. Auto vibration mounting
5. Duty selector switch
6. Ammeter with selector switch
7. Frequency meter
8. Current transformer of suitable ratio
9. Power factor meter, hour counter meter
10. Trip relay for thermal sensor
11. **Indication lamp with protection for**
   a) low lube oil pressure shut down indication
   b) High water temperature shut down indication
   c) Over speed shut down indication
   d) Over current shut down indication
   e) Over voltage trip indication
   f) Earth fault shut down indication
   g) Over voltage shut down indication
   h) Indication reset button
   i) Key switch / manual start/stop push button
   j) Engine protection system with earthing the generator set as per BNBC code.
   k) Auto shut down and audible alarm in case of aromatics or defects such as low oil pressure, high engine temperature, high/under voltage.
   l) Power terminal board 4 phase
   m) 4 pole circuit breaker with protection

The alternator has the following specifications:

<table>
<thead>
<tr>
<th>Alternator</th>
<th>Output in KVA:</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Continuous: 500KVA at 40°C at 90% relative humidity.</td>
<td></td>
</tr>
<tr>
<td>ii) Standby: 550 KVA at 40°C at 90% relative humidity.</td>
<td></td>
</tr>
</tbody>
</table>
3-phase, 4 wire, 50 Hz at 1500 rpm with over load for one hour at conditions specified in general A(01) & A(02) above.

**Air Filter:** Dry paper replaceable element type, and designed for easy maintenance are to be provided. The turbocharger shall be of such design as to be of self-cleaning. Turbocharger requiring periodic cleaning will not be acceptable.

**Oil Filter:** Multi-bowl, replaceable element, full flow type.

**Fuel Filter:** Multi-bowl, replaceable element, full flow type.

**Starting:** Electric starting motor with solenoid and overrunning clutch drive shall be furnished on the engine. The starting motor shall be of the required voltage recommended by the engine manufacturer. Batteries shall be provided, and shall be of lead acid type of sufficient capacity for at least 90 seconds at firing times speed, and also with capacity for starting the engine a minimum of four times, mounted on the unit or in separate rack located beside engine, including hydrometer, rack and other necessary item. The engine shall start automatically after receiving normal power failure signal from LT panel.

**Battery Charger:** A completely automatic battery charger shall be provided, which shall maintain the starting batteries always at full charge. It shall have a high charging rate (12 amps) compatible with the batteries and, when the batteries are brought up to full charge, it shall automatically reduce the charge rate to a continuous trickle charge. An ammeter indicating the high charge rate and fuses on input and output to protect the rectifier and transformer shall be incorporated.

**Wave Form:** The output voltage waveform shall be within B.S. 2613 AND B.S 4999 limits.

**Engine Protection:** The engine shall be equipped with pre-warming alarm devices, which will actuate visible and audible alarms in the event of low oil pressure or excessive jacket water temperature and over-speed. The engine shall be equipped with automatic safety shutdown controls which shut-down the engine in the event of low lubricating oil pressure or high jacket water temperature, Over speed, and reverse power, units shall have auxiliary contacts for a future remote alarm.

**Base Frame:** The engine and alternator shall be mounted on a fabricated steel type base frame of welded construction adequately designed to resists bending and torsional forces. The base frame shall be accurately align and support the assembly and shall provide lifting points and location points for securing to the foundation.

**Coupling:** The alternator casing shall be flange mounted to the engine fly wheel housing and the rotor shaft, coupled to the engine fly wheel through a flexible element to minimize torsional vibration throughout the operating range.

**The engine with fuel injection equipment with:**

a) Fuel oil filters and pressure gangue  
b) Tachometer  
c) Lubricating oil filters and pressure gangue  
d) Air cleaners / filters  
e) Indicating lamps ON-OFF TRIP  
f) Fuel solenoid energized to run  
g) Lubricating oil pressure pump and temperature gangue  
h) Water circulating pump  
i) Battery charging generator and regulator
Section VII Schedule of Requirements

j) Precisian governor
k) Starter motor
l) Fuel Solenoid
m) Thermostatically controlled cooling system and by pass system
n) Service power meter
o) Fly wheel, fan, pulley guard protection

**Engine Details:**
- Industrial Diesel Engine, 4 stroke, direct injection, water cooled diesel engine.
- Overload capacity 10% for 1 hour in 12 hours.
- Speed regulator electronic governor
- number of cylinder 6 to 12 in line or V
- Compression Ratio 13.6:1 or more
- Turbocharged

**Radiator:** Heat rejected to the engine jacket water shall be discharged to the atmosphere through a close coupled radiator the radiator shall be sized to cool the engine continuously while operating at full rated load and at site conditions. It shall be folder core design, consisting of individually replaceable core assembling sealed between the top and bottom tank and which can be replaced individually at the job site. The radiator shall be suitable for operation upto 50°C.

**Engine Cooling:** The diesel engine shall be cooled via a tropical air blast heavy duty radiator with engine driven pusher type fan, complete with water, circulating pump, radiator guard, thermostat and by pass system. The engine jacket cooling system shall be a closed circuit design with provision for lifting, expansion and deaeration. The cooling pump shall be driven by the engine. Auxiliary coolant pumps required for heat exchanges as separate circuit after cooling shall also be engine driven. The cooling system shall tolerate at least 172.4 kpa (55PSi) Static head. Cooling temperature shall be internally regulated to disconnect external cooling system until operating temperature is achieved.

**Anti Vibrator Mounting:** A set of anti-vibration mounts shall be supplied loose for positioning beneath bed frame when the skid is delivered to site. These have their own in built leveling device and friction pad, therefore fixing to the floor is not necessary.

**Fuel Tank And Other Feature:**
- Free standing fuel tank for minimum 10 hours of full load running with the following data:
  1. Name of the manufacturer
  2. Country of manufacturer
  3. Capacity
  4. Type of mounting: Generator base frame.
  5. Type of feed pump: Automatic feed transfer pump.
  6. Type of manual feed pump: Semi-rotary or equivalent.
- Residential exhaust silencer with mounting accessories
- Lead acid battery (dry condition) with connection leads
- Toolkit for routine maintenance
- Engine operating manual
- Spare parts catalogue with wiring diagram

**Exhaust System (Radiator Duct):** The engine shall be supplied with Acoustic type Residential silencers, flexible bellows sections and rigid exhaust pipe of suitable length, suitable for use with Vee from engine, supplied loose for site erection. The complete exhaust system shall be designed to prevent any de-rate of the engine due to excessive back pressure. All exhaust components are to be
finished with heat resistant paint. The silencer shall be residential /hospital type with a very low noise level. Radiator exhaust by the exhaust duct through wall opening.

**Automatic Transfer Switch (ATS)**: The automatic transfer switch shall be suitable Amps rating, 4-pole, 400V, 50Hz and short circuit breaking capacity of 65KA. The ACS shall be withdrawable type mounted in a panel, free standing floor mounted type, dust and vermin proof. Auto start & auto change over to load within 10sec. During normal power failure and auto stop & auto change over to normal supply within 3-5 minutes (cooling load operation) after restoration of normal power supply to generator in the event of main failure. Display lamps indicating the healthy condition of generator and main supply shall be provided on the panel. Suitable earthing block shall be provided with automatic transfer switch. The ATS shall be equipped with audiovisual annunciation, programmable microprocessor logic and digital display features, Generator safeguard circuit protection, indicating lamps push buttons etc. information to be given with proven document / catalogue.

**Performance required data** (to be supplied):

A. Fuel consumption in liters / KWH shall not be greater than 0.22litre/KWH at optimum load condition and fuel consumption shall also be mentioned at the following load conditions:
   - At 25% load :-
   - At 50% load :-
   - At 75% load :-
   - At 100% load :-
   - At 110% load :-

B. Lubrication oil consumption in liters/ hour
   - 50% load
   - 75% load
   - 100% load

C. i) The electricity output to be generated per hour
   - ii) The maximum volume of fuel to be consumed per Kilowatt hour while in operation.

**Bypass system**: A manual by pass system of suitable rating shall be provided separately or within ATS so that the continuity of the service can be maintained in case of any disturbance in auto-transfer switch.

**Installation of new Generator set**: Installation, testing and commissioning of 400/230 Volt, 3-phase, 4 wires, 50Hz, 500KVA prime power rating capacity floor mounted indoor type brand new emergency auto start continuous rating diesel generating set is to be mention site. ATS, bypass switch. Proposed 500KVA Gen-set to be placed with the help of manual by labor and also with the help of chain pulley and other mechanical devices including covering all risks by the working agency as per manufacturer's instruction manual. This includes 07(Seven) days test operation of the Generating set on load at the rate of 08 (Eight) hours per day including supply of lubricants and fuel as per manufacturers instruction manual with noting down of the operation data in a log book of prescribed form including routine maintenance, adjustment etc. during the trial operation and handing over of complete set in satisfactory working condition.

**Warranty**: The Bidder shall do (free) Operation and Maintenance works engaging 01 skilled technician & also supply of necessary spares and consumables such as Oil filter, Air filter, Fuel filter, coolant without Engine oil and Fuel within 12(Twelve) months (24/7) warranty obligations from the date of official hand over of the brand new 500KVA(prime power) Diesel Power Generator. Ensuring after sale service with spare parts within the life time of the generator sets.
Training: After successful testing & commissioning of the brand new 500KVA (Prime Power) Diesel Power Generator, the Bidder shall have to arrange a training program for personnel to be employed by the employer for day-to-day Operation and maintenance of the Diesel power Generator during 01 year warranty obligations. Also no claim will be entertained for any additional payment made for training by the Bidder.

3.1.2.21: Other works/Equipment shall be satisfied specification mentioned on as per Schedule of Requirements and direction of Engineer in charge.

3.1.3. Civil Works:
Construction of new Generator room with Cement concrete pad basement of BBTA and HT AVR base at BBTA premises for supply and installation of 1250x2 KVA substation, BBTA, Dhaka as direction of the Engineer-in-charge.

4. Electrical Installation:
4.1. Standard Codes and Regulations
The installation in general shall be carried out in conformity with the latest addition of wiring rules of the Institute of Engineers (London), hereinafter referred to as “IEE Wiring Rules” and the British Standard Code of Practice for the relevant works. But where the under noted specifications differ from these rules and standard, the specifications written here under shall be followed. Any special requirement of the electrical inspector, Government of Bangladesh or the PDB or any other legal authority shall also be complied with at no extra cost to the Purchaser.

4.2. Approval and List of Materials, Fixtures and Equipment
As soon as practicable after execution of contract and before any materials, fixture or equipment are purchased, the Bidder shall submit to the Purchaser for approval a complete list in triplicate of materials, fixtures and equipment to be used with their brand and manufacturer. Any materials, fixtures and equipment listed which is not accordance with the specification requirements may be rejected.

4.3 Instructions
Verbal instructions, whatsoever and from whomsoever will have no binding. All such instructions must be in writing from competent authority.
4. Drawings

These Bidding Documents includes drawings.

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<tr>
<td>2.</td>
<td>Working drawing</td>
<td>For proper installation</td>
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5. Inspections and Tests

The following inspections and tests shall be performed:
The Bidder shall confirm of following test for required item as per specification (as per IEC regulation or other mentioned standard):
   a) Type Test
   b) Short Circuit Test
   c) Open Circuit Test
   d) HV/Impulse Test
   e) Environmental Class
   f) Other required Test(if any)
PART 3 - Contract
Section VIII. General Conditions of Contract

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Section VIII. General Conditions of Contract

1. Definitions

1.1 The following words and expressions shall have the meanings hereby assigned to them:

(a) “Bank” means the World Bank and refers to the International Bank for Reconstruction and Development (IBRD) or the International Development Association (IDA).

(b) “Contract” means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.

(c) “Contract Documents” means the documents listed in the Contract Agreement, including any amendments thereto.

(d) “Contract Price” means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.

(e) “Day” means calendar day.

(f) “Completion” means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.

(g) “GCC” means the General Conditions of Contract.

(h) “Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.

(i) “Purchaser’s Country” is the country specified in the Special Conditions of Contract (SCC).

(j) “Purchaser” means the entity purchasing the Goods and Related Services, as specified in the SCC.

(k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.

(l) “SCC” means the Special Conditions of Contract.
(m) “Sub-Bidder” means any person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

(n) “Supplier” means the person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.

(o) “The Project Site,” where applicable, means the place named in the SCC.

2. Contract Documents

2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

3. Corrupt and Fraudulent Practices

3.1 The Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Appendix to the GCC.

3.2 The Purchaser requires the Supplier to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

4. Interpretation

4.1 If the context so requires it, singular means plural and vice versa.

4.2 INCOTERMS

(a) Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by INCOTERMS.

(b) The terms EXW, CIP, FCA, CFR and other similar terms, when used, shall be governed by the rules prescribed in the current edition of INCOTERMS specified in the SCC and published by the International Chamber of Commerce in Paris, France.

4.3 Entire Agreement

The Contract constitutes the entire agreement between the
Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Contract.

4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

(a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party’s rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified, in which case, for purposes of interpretation of the Contract, this translation shall govern.

5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Supplier.
Section VIII. General Conditions of Contract

6. Joint Venture, Consortium or Association

6.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

7. Eligibility

7.1 The Supplier and its Sub-Bidders shall have the nationality of an eligible country. A Supplier or Sub-Bidder shall be deemed to have the nationality of a country if it is a citizen or constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country.

7.2 All Goods and Related Services to be supplied under the Contract and financed by the Bank shall have their origin in Eligible Countries. For the purpose of this Clause, origin means the country where the goods have been grown, mined, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

8. Notices

8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the SCC. The term “in writing” means communicated in written form with proof of receipt.

8.2 A notice shall be effective when delivered or on the notice’s effective date, whichever is later.

9. Governing Law

9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser’s Country, unless otherwise specified in the SCC.

9.2 Throughout the execution of the Contract, the Bidder shall comply with the import of goods and services prohibitions in the Purchaser’s country when

(a) as a matter of law or official regulations, the Borrower’s country prohibits commercial relations with that country; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower’s Country prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

10 Settlement of

10.1 The Purchaser and the Supplier shall make every effort to
Disputes

resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

10.3 Notwithstanding any reference to arbitration herein,

(a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

(b) the Purchaser shall pay the Supplier any monies due the Supplier.

11. Inspections and Audit by the Bank

11.1 The Supplier shall keep, and shall make all reasonable efforts to cause its Sub-Bidders to keep, accurate and systematic accounts and records in respect of the Goods in such form and details as will clearly identify relevant time changes and costs.

11.2 The Supplier shall permit, and shall cause its Sub-Bidders to permit, the Bank and/or persons appointed by the Bank to inspect the Supplier’s offices and all accounts and records relating to the performance of the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the Bank if requested by the Bank. The Supplier’s and its Sub-Bidders and consultants’ attention is drawn to Clause 3 [Fraud and Corruption], which provides, inter alia, that acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under this Sub-Clause 11.1 constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Bank’s prevailing sanctions procedures)
12. **Scope of Supply**  
12.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.

13. **Delivery and Documents**  
13.1 Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule of Requirements. The details of shipping and other documents to be furnished by the Supplier are specified in the SCC.

14. **Supplier’s Responsibilities**  
14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.

15. **Contract Price**  
15.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the SCC.

16. **Terms of Payment**  
16.1 The Contract Price, including any Advance Payments, if applicable, shall be paid as specified in the SCC.

16.2 The Supplier’s request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.

16.3 Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.

16.4 The currencies in which payments shall be made to the Supplier under this Contract shall be those in which the bid price is expressed.

16.5 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period set forth in the SCC, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate shown in the SCC, for the period of delay until payment has been made in full, whether before or after judgment or arbitrage award.

17. **Taxes and Duties**  
17.1 For goods manufactured outside the Purchaser’s Country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the.
Purchaser’s Country.

17.2 For goods Manufactured within the Purchaser’s country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.

17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser’s Country, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

18. Performance Security

18.1 If required as specified in the SCC, the Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount specified in the SCC.

18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier’s failure to complete its obligations under the Contract.

18.3 As specified in the SCC, the Performance Security, if required, shall be denominated in the currency(ies) of the Contract, or in a freely convertible currency acceptable to the Purchaser; and shall be in one of the format stipulated by the Purchaser in the SCC, or in another format acceptable to the Purchaser.

18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier’s performance obligations under the Contract, including any warranty obligations, unless specified otherwise in the SCC.

19. Copyright

19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

20. Confidential Information

20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such
information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Sub-Bidder such documents, data, and other information it receives from the Purchaser to the extent required for the Sub-Bidder to perform its work under the Contract, in which event the Supplier shall obtain from such Sub-Bidder an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.

20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.

20.3 The obligation of a party under GCC Sub-Claus 20.1 and 20.2 above, however, shall not apply to information that:

(a) the Purchaser or Supplier need to share with the Bank or other institutions participating in the financing of the Contract;

(b) now or hereafter enters the public domain through no fault of that party;

(c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or

(d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.

21. Subcontracting

21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.
22. Specifications and Standards

22.1 Technical Specifications and Drawings

(a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VI, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods’ country of origin.

(b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.

(c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.

23. Packing and Documents

23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods’ final destination and the absence of heavy handling facilities at all points in transit.

23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

24. Insurance

24.1 Unless otherwise specified in the SCC, the Goods supplied under the Contract shall be fully insured—in a freely convertible currency from an eligible country—against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable INCOTERMS or in the manner specified in the
Section VIII. General Conditions of Contract

25. Transportation and Incidental Services

25.1 Unless otherwise specified in the SCC, responsibility for arranging transportation of the Goods shall be in accordance with the specified INCOTERMS.

25.2 The Supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

(a) performance or supervision of on-site assembly and/or start-up of the supplied Goods;

(b) furnishing of tools required for assembly and/or maintenance of the supplied Goods;

(c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;

(d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and

(e) training of the Purchaser’s personnel, at the Supplier’s plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

25.3 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

26. Inspections and Tests

26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in the SCC.

26.2 The inspections and tests may be conducted on the premises of the Supplier or its Sub-Bidder, at point of delivery, and/or at the Goods’ final destination, or in another place in the Purchaser’s Country as specified in the SCC. Subject to GCC Sub-Clause 26.3, if conducted on the premises of the Supplier or its Sub-Bidder, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 26.2, provided that the Purchaser bear all of its own
costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications codes and standards under the Contract, provided that the Supplier’s reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier’s performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.

26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 26.4.

26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. Liquidated Damages

27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the delivered price of the delayed
28. Warranty

28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

28.2 Subject to GCC Sub-Clause 22.1(b), the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.

28.3 Unless otherwise specified in the SCC, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.

28.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

28.5 Upon receipt of such notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

28.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the SCC, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier’s risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser’s compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney’s fees and expenses, which the Purchaser
may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and

(b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser’s name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier’s request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Sub-Bidders from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney’s fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing,
specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30 Limitation of Liability

30.1 Except in cases of criminal negligence or willful misconduct,

(a) the Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser and

(b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the supplier to indemnify the purchaser with respect to patent infringement.

31. Change in Laws and Regulations

31.1 Unless otherwise specified in the Contract, if after the date of 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser’s country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. Force Majeure

32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

32.2 For purposes of this Clause, “Force Majeure” means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser.
in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

33. Change Orders and Contract Amendments

33.1 The Purchaser may at any time order the Supplier through notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:

(a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;

(b) the method of shipment or packing;

(c) the place of delivery; and

(d) the Related Services to be provided by the Supplier.

33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier’s performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight (28) days from the date of the Supplier’s receipt of the Purchaser’s change order.

33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

33.4 Subject to the above, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

34. Extensions of Time

34.1 If at any time during performance of the Contract, the Supplier or its Sub-Bidders should encounter conditions impeding timely delivery of the Goods or completion of Related Services
pursuant to GCC Clause 13, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier’s notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier’s time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. Termination

35.1 Termination for Default

(a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:

(i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34;

(ii) if the Supplier fails to perform any other obligation under the Contract; or

(iii) if the Supplier, in the judgment of the Purchaser has engaged in fraud and corruption, as defined in GCC Clause 3, in competing for or in executing the Contract.

(b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency.

(a) The Purchaser may at any time terminate the Contract by giving notice to the Supplier if the Supplier becomes
bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

35.3 Termination for Convenience.

(a) The Purchaser, by notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser’s convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

(b) The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier’s receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

(i) to have any portion completed and delivered at the Contract terms and prices; and/or

(ii) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

36. Assignment

36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

37. Export Restriction

37.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, which arise from trade regulations from a country supplying those products/goods, systems or services, and which substantially impede the Supplier from meeting its obligations under the Contract, shall release the Supplier from the obligation to provide deliveries or services, always provided, however, that the Supplier can demonstrate to the satisfaction of the Purchaser and of the Bank that it has completed all formalities in a timely manner, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the
Contract. Termination of the Contract on this basis shall be for the Purchaser’s convenience pursuant to Sub-Clause 35.3.
APPENDIX TO GENERAL CONDITIONS
Bank’s Policy- Corrupt and Fraudulent Practices

(text in this Appendix shall not be modified)

Guidelines for Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011:

“Fraud and Corruption:

1.16 It is the Bank’s policy to require that Borrowers (including beneficiaries of Bank loans), bidders, suppliers, Bidders and their agents (whether declared or not), sub-Bidders, sub-consultants, service providers or suppliers, and any personnel thereof, observe the highest standard of ethics during the procurement and execution of Bank-financed contracts. In pursuance of this policy, the Bank:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) “corrupt practice” is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

(ii) “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

(iv) “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

In this context, any action to influence the procurement process or contract execution for undue advantage is improper.

For the purpose of this sub-paragraph, “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes World Bank staff and employees of other organizations taking or reviewing procurement decisions.

For the purpose of this sub-paragraph, “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.

For the purpose of this sub-paragraph, “parties” refers to participants in the procurement process (including public officials) attempting either themselves, or through another person or entity not participating in the procurement or selection process, to simulate competition or to establish bid prices at artificial, non-competitive levels, or are privy to each other’s bid prices or other conditions.
(v) "obstructive practice" is:

(aa) deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a Bank investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or

(bb) acts intended to materially impede the exercise of the Bank’s inspection and audit rights provided for under paragraph 1.16(e) below.

(b) will reject a proposal for award if it determines that the bidder recommended for award, or any of its personnel, or its agents, or its sub-consultants, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

(c) will declare misprocurement and cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement or the implementation of the contract in question, without the Borrower having taken timely and appropriate action satisfactory to the Bank to address such practices when they occur, including by failing to inform the Bank in a timely manner at the time they knew of the practices;

(d) will sanction a firm or individual, at any time, in accordance with the prevailing Bank’s sanctions procedures,\textsuperscript{15} including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Bank-financed contract; and (ii) to be a nominated\textsuperscript{16};

\textsuperscript{14}For the purpose of this sub-paragraph, “party” refers to a participant in the procurement process or contract execution.

\textsuperscript{15}A firm or individual may be declared ineligible to be awarded a Bank funded contract upon: (i) completion of the Bank’s sanctions proceedings as per its sanctions procedures, including, inter alia, cross-debarment as agreed with other International Financial Institutions, including Multilateral Development Banks, and through the application the World Bank Group corporate administrative procurement sanctions procedures for fraud and corruption; and (ii) as a result of temporary suspension or early temporary suspension in connection with an ongoing sanctions proceeding. See footnote 14 and paragraph 8 of Appendix 1 of these Guidelines.

\textsuperscript{16}A nominated sub-Bidder, consultant, manufacturer or supplier, or service provider (different names are used depending on the particular bidding document) is one which has either been: (i) included by the bidder in its pre-qualification application or bid because it brings specific and critical experience and know-how that allow the bidder to meet the qualification requirements for the particular bid; or (ii) appointed by the Borrower.
(e) will require that a clause be included in bidding documents and in contracts financed by a Bank loan, requiring bidders, suppliers and Bidders, and their sub-Bidders, agents, personnel, consultants, service providers, or suppliers, to permit the Bank to inspect all accounts, records, and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Bank.”
Section IX. Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

| GCC 1.1(i)  | The Purchaser’s country is: Bangladesh. |
| GCC 1.1(j)  | The Purchaser is: Bangladesh Bank represented by General Manager(Electro-Mechanical.), Common Services Department-2, Bangladesh Bank Head Office, Motijheel Commercial Area, Dhaka-1000. |
| GCC 1.1 (o) | The Project Site(s)/Final Destination(s) is/are: Near Data Center (NDC), Bangladesh Bank Training Academy, Mirpur, Dhaka, Bangladesh. |
| GCC 4.2 (a) | The meaning of the trade terms shall be as prescribed by INCOTERMS. If the meaning of any trade term and the rights and obligations of the parties thereunder shall not be as prescribed by INCOTERMS, they shall be as prescribed by: Internationally accepted trade terms. |
| GCC 4.2 (b) | The version edition of INCOTERMS shall be INCOTERMS 2010 – ICC Official Rules for the Interpretation of Trade Terms” published in September 1999 by the International Chamber of Commerce, 38 Cours Albert 1er, 75008 Paris, France. |
| GCC 5.1     | The language shall be: English |
| GCC 8.1     | For notices, the Purchaser’s address shall be: |
| Project Director |
| Financial Sector Support Project |
| Main Building(4th Floor), Bangladesh Bank, Head Office, |
| Telephone: +880-2-9530071 |
| Facsimile number: +880-2-9530726 |
| Electronic mail address: masud.biswas@bb.org.bd |
| GCC 9.1     | The governing law shall be the law of: Bangladesh |
| GCC 10.2    | The rules of procedure for arbitration proceedings pursuant to GCC Clause 10.2 shall be as follows: |
| (a) Contract with foreign Supplier: Rules of ICC |
| GCC 10.2 (a)— All disputes arising in connection with the present Contract shall be finally settled under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance |
with said Rules.

(b) **Contracts with Supplier national of the Purchaser’s country:**

In the case of a dispute between the Purchaser and a Supplier who is a national of the Purchaser’s country, the dispute shall be referred to adjudication or arbitration in accordance with the laws of the Purchaser’s country Bangladesh.

| GCC 13.1 | Details of Shipping and other Documents to be furnished by the Supplier are:  
  
a. Delivery note;  
b. Manufacturer’s/Supplier’s warranty certificate;  
c. Inspection Report.  
d. Certificate of origin.  
e. Standard Certificate.  
f. Post shipment/Landing inspection report/certificate. |
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<tr>
<td>GCC 15.1</td>
<td>The prices charged for the Goods supplied and the related Services performed shall not be adjustable.</td>
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| GCC 16.1 | **Payment Method:**  
GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:  

(a) **Advance Payment:** Ten (10) percent of the Contract Price shall be paid within thirty (30) days of signing of the Contract, and upon submission of claim and a bank guarantee for equivalent amount valid until the Goods are delivered and in the form provided in the bidding documents or another form acceptable to the Purchaser.

(b) **Running Bill Payment:** Sixty(60) percent of the Contract Price shall be paid after receipt of all goods as per specification along with the following certificates/documents:

i. Copies of Supplier’s invoice showing goods’ description, quantity.

ii. Challan form.

iii. Bill of lading (if any)

iv. Warranty certificate from the Manufacturer.


vi. Supplier’s/manufacturer’s certificate guaranteeing quality of the goods to the effect that goods have been manufactured by 1st class materials & workmanship & that the goods confirm specifications, also suitable for country
like Bangladesh.


(c) **Final Bill Payment:** Thirty (30) percent of the Contract Price shall be paid after fifteen (15) days trial run operation from the date of successful commissioning and all Payment shall be made in **Bangladesh Taka** within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other required contracted Services have been performed.

(d) If the performance during the trial operation period becomes unsatisfactory the systems shall not be acceptable to the Purchaser & the Supplier shall take back defective components of the systems or the whole system, if required and replace the new one at their own cost.

(e) All payments shall be made after deduction of taxes, VAT & other charges as applicable under the relevant Laws and Regulations of Bangladesh at the time of bill payment. All taxes, VAT, duties & other charges shall be borne by the Supplier.

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<tr>
<th>GCC 16.5</th>
<th>The payment-delay period after which the Purchaser shall pay interest to the supplier shall be 60(sixty) days. The interest rate that shall be applied is 5 %.</th>
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| GCC 18.1 | A Performance Security **shall be required**  
The amount of Performance Security shall be 10% (Ten percent) of the Contract Price.  
The procuring entity may increase the amount of the performance security amounting 25% of the contract value, if the TEC considers the tender is unbalanced and/or front loaded. |
| GCC 18.3 | The Performance Security shall be only in the form of Bank Guarantee in favour of **Project Director, Financial Sector Support Project, Bangladesh Bank, Head Office.** |
| GCC 18.4 | Discharge of the Performance Security shall take place after 28 days of Warranty Period (12 months) of the goods and related service. |
### GCC 23.2
The packing, marking and documentation within and outside the packages shall be: The outer packing may be clearly marked on at least four slides as follows:
- Name and address of Procuring Entity
- Name of the Supplier
- Contract Description
- Final Destination/Delivery Point
- Gross weight
- Package number of total number of packages
- Brief description of the content

### GCC 24.1
The Supplier shall obtain Third Party Liability Insurance, Worker’s Compensation Insurance, Employer’s Liability Insurance and/or other insurance (as applicable) in accordance with the statutory requirements of Bangladesh. The insurance shall cover the period from **beginning date, relative to the Effective Date of the Contract** until **expiration date, relative to the Effective Date of the Contract or its completion.**

### GCC 25.1
Responsibility for transportation of the Goods shall be as specified in the INCOTERMS. The Supplier is required to transport the Goods to Near Data Center (NDC), BBTA, Mirpur, Dhaka, Bangladesh including insurance and storage shall be arranged by the Supplier, and related costs shall be included in the Contract Price.

### GCC 25.2
Incidental services to be provided are:
- a) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods.
- b) Maintenance and/or repair of the supplied Goods.
- c) Train up Bangladesh Bank nominated personnel, at the Supplier’s plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.
### GCC 26.1
The inspections and tests shall be:

The Bidder shall confirm of following test for required item as per specification (as per IEC regulation or other mentioned standard):

a) The Factory Acceptance Test carried out by 03(three) Engineers of Bangladesh Bank for Equipment like Generator, HT AVR, Dry type transformer, HT Switchgear Panel, LT Switchgear Panel, PFI Panel etc. All expenses related to Inspection/Test shall bear by the Bidder as per Government rules. Bidder shall arrange required test for required Equipment or components as per specification.

b) Post Landing Inspection shall be carried out by nominated firm which shall be selected from at least three proposed recognized company/firm. All expense related to Inspection/Test shall be borne by the Bidder.

### GCC 26.2
The Inspections and tests shall be conducted at: At factory or warehouse or any other laboratory where specification/ performance of Goods are possible to justify.

### GCC 27.1
The liquidated damage shall be: 0.10 of ONE (1) percent of the contract value of the undelivered Goods or any part thereof delivered after expiry of the Delivery and Completion Schedule or extended Delivery and Completion Schedule, as applicable, per week of delay. Maximum amount of liquidated damages for the undelivered Goods or any part thereof is 10%(ten percent) of the final contract of the whole of the Goods and related works.

### GCC 28.3
(a) The place(s) of Warranty of final destination(s) shall be: BBTA, Mirpur, Bangladesh.

(b) The period of validity of the Warranty shall be: 12(twelve) months after fifteen(15) days trail run operation from the date of successful commissioning and in condition, the Purchaser declaring that the Goods have been delivered and that all other required contracted Services have been performed.

### GCC 28.5
The period for repair or replacement shall be: 3(three) days. In case of detecting any kind of defect of goods or any portion thereof resulting to disruption of service within the warranty period will be taken by the period and 0.05 of ONE (1) percent of the contract price of disruption services related goods shall be deducted per day from security deposit for disruption of service. The maximum amount of deduction shall be equal to security deposit.
Attachment: Price Adjustment Formula

If in accordance with GCC 15.1, prices shall be adjustable, the following method shall be used to calculate the price adjustment:

15.1 Prices payable to the Supplier, as stated in the Contract, shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components in accordance with the formula:

\[ P_1 = P_0 \left[ a + \frac{bL_1 + cM_1}{L_0 M_0} \right] - P_0 \]

in which:

- \( P_1 \) = adjustment amount payable to the Supplier.
- \( P_0 \) = Contract Price (base price).
- \( a \) = fixed element representing profits and overheads included in the Contract Price and generally in the range of five (5) to fifteen (15) percent.
- \( b \) = estimated percentage of labor component in the Contract Price.
- \( c \) = estimated percentage of material component in the Contract Price.
- \( L_0, L_1 \) = *labor indices applicable to the appropriate industry in the country of origin on the base date and date for adjustment, respectively.
- \( M_0, M_1 \) = *material indices for the major raw material on the base date and date for adjustment, respectively, in the country of origin.

The Bidder shall indicate the source of the indices and the base date indices in its bid. The coefficients \( a, b, \) and \( c \) as specified by the Purchaser are as follows:

\[ a = \text{[insert value of coefficient]} \]
\[ b = \text{[insert value of coefficient]} \]
\[ c = \text{[insert value of coefficient]} \]

Base date = thirty (30) days prior to the deadline for submission of the bids.

Date of adjustment = [insert number of weeks] weeks prior to date of shipment (representing the mid-point of the period of manufacture).

The above price adjustment formula shall be invoked by either party subject to the following further conditions:

(a) No price adjustment shall be allowed beyond the original delivery dates. As a rule, no price adjustment shall be allowed for periods of delay for which the
Supplier is entirely responsible. The Purchaser will, however, be entitled to any
decrease in the prices of the Goods and Services subject to adjustment.

(b) If the currency in which the Contract Price $P_0$ is expressed is different from the
currency of origin of the labor and material indices, a correction factor will be
applied to avoid incorrect adjustments of the Contract Price. The correction
factor shall correspond to the ratio of exchange rates between the two currencies
on the base date and the date for adjustment as defined above.

(c) No price adjustment shall be payable on the portion of the Contract Price paid to
the Supplier as advance payment.
Section X. Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

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2. Performance Security .......................................................................................................... 1699

3. Advance Payment Security ................................................................................................. 1733
Letter of Acceptance

[letterhead paper of the Purchaser]

To: [name and address of the Supplier]

Subject: Notification of Award Contract No. . . . . . . . .

This is to notify you that your Bid dated . . . [insert date] . . . for execution of the . . . . . . . . [insert name of the contract and identification number, as given in the SCC] . . . for the Accepted Contract Amount of . . . . . . . [insert amount in numbers and words and name of currency], as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract, using for that purpose the of the Performance Security Form included in Section X, Contract Forms, of the Bidding Document.

Authorized Signature: ___________________________________________
Name and Title of Signatory: ___________________________________________
Name of Agency: ___________________________________________

Attachment: Contract Agreement
Contract Agreement

[The successful Bidder shall fill in this form in accordance with the instructions indicated]

THIS AGREEMENT made

the [insert: number] day of [insert: month], [insert: year].

BETWEEN

(1) [insert complete name of Purchaser], a [insert description of type of legal entity, for example, an agency of the Ministry of .... of the Government of [insert name of Country of Purchaser], or corporation incorporated under the laws of [insert name of Country of Purchaser] and having its principal place of business at [insert address of Purchaser] (hereinafter called “the Purchaser”), of the one part, and

(2) [insert name of Supplier], a corporation incorporated under the laws of [insert: country of Supplier] and having its principal place of business at [insert: address of Supplier] (hereinafter called “the Supplier”), of the other part:

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., [insert brief description of Goods and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services

The Purchaser and the Supplier agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other contract documents.

   (a) the Letter of Acceptance
   (b) the Letter of Bid
   (c) the Addenda Nos._____ (if any)
   (d) Special Conditions of Contract
   (e) General Conditions of Contract
   (f) the Specification (including Schedule of Requirements and Technical Specifications)
(g) the completed Schedules (including Price Schedules)

(h) any other document listed in GCC as forming part of the Contract

3. In consideration of the payments to be made by the Purchaser to the Supplier as specified in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of [insert the name of the Contract governing law country] on the day, month and year indicated above.

For and on behalf of the Purchaser

Signed: [insert signature]
in the capacity of [insert title or other appropriate designation]
in the presence of [insert identification of official witness]

For and on behalf of the Supplier

Signed: [insert signature of authorized representative(s) of the Supplier]
in the capacity of [insert title or other appropriate designation]
in the presence of [insert identification of official witness]
Performance Security

Option 1: (Bank Guarantee)

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: [insert name and Address of Purchaser ]

Date: __ [Insert date of issue]

PERFORMANCE GUARANTEE No.: [Insert guarantee reference number]

Guarantor: [Insert name and address of place of issue, unless indicated in the letterhead]

We have been informed that __ [insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture] (hereinafter called "the Applicant") has entered into Contract No. [insert reference number of the contract] dated [insert date] with the Beneficiary, for the supply of __ [insert name of contract and brief description of Goods and related Services] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of [insert amount in figures] (__________) [insert amount in words],\(^1\) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary’s complying demand supported by the Beneficiary’s statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2… \(^2\), and any demand for payment under it must be received by us at this office indicated above on or before that date.

\(^1\) The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, and denominated either in the currency(ies) of the Contract or a freely convertible currency acceptable to the Beneficiary.

\(^2\) Insert the date twenty-eight days after the expected completion date as described in GC Clause 18.4. The Purchaser should note that in the event of an extension of this date for completion of the Contract, the Purchaser would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Purchaser might consider adding the following text to the form, at the end of the penultimate
This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

________________________
[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

paragraph: “The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months][one year], in response to the Beneficiary’s written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.”
Option 2: Performance Bond (Not used)

By this Bond [insert name of Principal] as Principal (hereinafter called “the Supplier”) and [insert name of Surety] as Surety (hereinafter called “the Surety”), are held and firmly bound unto [insert name of Purchaser] as Obligee (hereinafter called “the Supplier”) in the amount of [insert amount in words and figures], for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Supplier and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Bidder has entered into a written Agreement with the Purchaser dated the ______ day of _______ , 20_____, for [name of contract and brief description of Goods and related Services] in accordance with the documents, plans, specifications, and amendments thereto, which to the extent herein provided for, are by reference made part hereof and are hereinafter referred to as the Contract.

NOW, THEREFORE, the Condition of this Obligation is such that, if the Supplier shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Supplier shall be, and declared by the Purchaser to be, in default under the Contract, the Purchaser having performed the Purchaser’s obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

1. complete the Contract in accordance with its terms and conditions; or

2. obtain a Bid or bids from qualified Bidders for submission to the Purchaser for completing the Contract in accordance with its terms and conditions, and upon determination by the Purchaser and the Surety of the lowest responsive Bidder, arrange for a Contract between such Bidder and Purchaser and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term “Balance of the Contract Price,” as used in this paragraph, shall mean the total amount payable by Purchaser to Supplier under the Contract, less the amount properly paid by Purchaser to Bidder; or

3. pay the Purchaser the amount required by Purchaser to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.

The Surety shall not be liable for a greater sum than the specified penalty of this Bond.
Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Purchaser named herein or the heirs, executors, administrators, successors, and assigns of the Purchaser.

In testimony whereof, the Supplier has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this __________ day of ______________ 20 ___.

SIGNED ON _______________ on behalf of ________________________________

By ______________________ in the capacity of ___________________________

In the presence of ____________________________________________________________

SIGNED ON _______________ on behalf of ________________________________

By ______________________ in the capacity of ___________________________

In the presence of ____________________________________________________________
Advance Payment Security

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: [Insert name and Address of Purchaser]

Date: [Insert date of issue]

ADVANCE PAYMENT GUARANTEE No.: [Insert guarantee reference number]

Guarantor: [Insert name and address of place of issue, unless indicated in the letterhead]

We have been informed that [insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture] (hereinafter called “the Applicant”) has entered into Contract No. [insert reference number of the contract] dated [insert date] with the Beneficiary, for the execution of [insert name of contract and brief description of Goods and related Services] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum [insert amount in figures] () [insert amount in words] is to be made against an advance payment guarantee.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of [insert amount in figures] (_________) [insert amount in words]¹ upon receipt by us of the Beneficiary’s complying demand supported by the Beneficiary’s statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:

(a) has used the advance payment for purposes other than toward delivery of Goods; or

(b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

¹ The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Purchaser.
A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary’s bank stating that the advance payment referred to above has been credited to the Applicant on its account number [insert number] at [insert name and address of Applicant’s bank].

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, has been certified for payment, or on the [insert day] day of [insert month], 2 [insert year], whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No.758, except that the supporting statement under Article 15(a) is hereby excluded.

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.
Invitation for Bids (IFB)

Bangladesh Bank
Financial Sector Support Project

Procurement of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator & Substation Capacity Expansion for Information Systems

Credit Number: 56640

IFB Title: Procurement of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator & Substation Capacity Expansion for Information Systems

IFB Number: BB(G)IT-03[NDC]

1. This Invitation for Bids (IFB) follows the General Procurement Notice (GPN) for this project that appeared in UNDB online on 09 July 2015.

2. The Peoples Republic of Bangladesh has received a credit from the International Development Association toward the cost of Financial Sector Support Project, and it intends to apply part of the proceeds of this credit to payments under the agreement(s) resulting from this IFB: Procurement of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator & Substation Capacity Expansion for Information Systems, IFB number: BB(G)IT-03[NDC].

3. The Bangladesh Bank serves as the implementing agency for the project and now invites sealed bids from eligible Bidders for Procurement of Supply, Installation, Testing, Commissioning, Implementation and related services of Generator & Substation Capacity Expansion for Information Systems.

4. Bidding will be conducted using the National Competitive Bidding (NCB) procedures specified in the World Bank’s Guidelines: Procurement under IBRD Loans and IDA Credits, edition of Procurement of Goods, Works and non-consulting services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers dated January 2011 (revised July 2014), and is open to all Bidders eligible as defined in these Guidelines that meet the following minimum qualification criteria:

   (a) The Bidder must have been in business for the last seven (07) years;
   (b) The Bidder shall have satisfactorily completed at least 01(One) of similar nature work (supply and installation of minimum 500KVA, 11/0.415KV Substation with HT AVR, HT Panel, LT Panel, PFI Panel etc. and 200KVA generator) in any Government/Semi-Government/Autonomous Organization during last 07(Seven) years. The Tenderer shall have to furnish work completion certificate in this respect from officer not below the rank of Executive Engineer or equivalent;
   (c) The Bidder must demonstrate present minimum average annual turnover of BDT 5,00,00,000.00 (Bangladesh Taka Five Crore) equivalent calculated as
total certified payments received for contracts in progress or completed in any particular year within the last seven (07) years;
(d) The Bidder must demonstrate minimum BDT 6,00,00,000.00 (Bangladesh Taka Six Crore) equivalent present liquid asset and/or line of credit, net of current commitments;
(e) The bidder must have at least three years proven experience in providing warranty support services.

5. Interested eligible Bidders may obtain further information from Bangladesh Bank and inspect the bidding documents at the address given below from 11:00AM to 5:00PM Bangladesh Standard Time (GMT+6:00) on all working days. The pre-bid meeting will be held at 03:00 PM on Sunday 31 March, 2019.

6. A complete set of bidding documents in English may be purchased by interested Bidders on submission of a written application to the address below and upon payment of a nonrefundable fee of BDT 10,000.00 (Bangladesh Taka Ten Thousand). The method of payment will be pay order or bank draft in favor of the Advertiser. No bidding documents would be sold on the day of Bid opening.

7. Bids must be delivered to Jahangir Alam Conference Hall, Fourth Floor, Main Building, Bangladesh Bank, Head Office, Motijheel C/A, Dhaka-1000 at or before 03:30PM Bangladesh Standard Time on Wednesday 24 April 2019. Bids need to be secured by a Bid Security. The amount of Bid Security required is BDT 22,00,000.00 (Bangladesh Taka Twenty Two Lac). Late bids will be rejected. Bids will be opened in the presence of Bidders’ representatives who choose to attend at Jahangir Alam Conference Hall at 03:40PM Bangladesh Standard Time on Wednesday 24 April 2019. Bidders should also submit softcopy of all bid documents in CD/DVD format.

8. The attention of prospective Bidders is drawn to (i) the fact that they will be required to certify in their bids that all software is either covered by a valid license or was produced by the Bidder and (ii) that violations are considered fraud, which can result in ineligibility to be awarded World Bank-financed contracts.

9. The attention of prospective Bidders is also drawn to the fact that at the time of receipt of the bidding documents, they carefully check that they have received all sections and attachments of the bidding documents. The Bidder may note that this IFB is a part of the Information Systems to be procured by the Purchaser.

Md. Masud Biswas
Executive Director
4th Floor, Main Building, Bangladesh Bank, Head Office, Motijheel, Dhaka
Telephone: +880-2-9530071, Fax: +880-2-9530726, Email: masud.biswas@bb.org.bd