NORTHERN ELECTRICITY SUPPLY COMPANY (NESCO) LIMITED

Tender Document

FOR

Design, Supply, Erection, Installation, Testing and Commissioning of 04 (Four) 33/11 kV Substations at BSCIC Industrial Park, Sirajganj on Turnkey Basis

Invitation Ref No : **27.29.0000.012.07.001.22-106**
Issued on : **13/02/2022**
Tender Package No : **GR-27**

One Stage Two Envelope Tendering Method (OSTETM), ICT

NORTHERN ELECTRICITY SUPPLY COMPANY LIMITED
(An Enterprise of Bangladesh Power Development Board)

নর্দান ইলেকট্রিসিটি সাপ্লাই কোম্পানী লিঃ

NORTHERN ELECTRICITY SUPPLY COMPANY LIMITED

(An Enterprise of Bangladesh Power Development Board)

তত্ত্বাবধায়ক প্রকৌশলী (ক্রয়)-এর দপ্তর, নেসকো লিঃ, হেতেম খাঁ, রাজশাহী।

Memo No: 27.29.0000.012.07.001.22-106 Date: 13/02/2022

INVITATION FOR TENDER (INTERNATIONAL)

1	Ministry / Division		Power Division, Ministry of Power, Energy & Mineral Resources.		
2	Agency		Northern Electricity Supply Company (NESCO) Limited		
3	Procuring Entity Name		Superintending Engineer (Procurement)		
4	Procuring Entity Code		Not Used		
5	Procuring Entity District		Rajshahi		
6	Invitation for		Design, Supply, Erection, Installation, Testing and Commissioning of 04 (Four) 33/11 kV Substations at BSCIC Industrial Park, Sirajganj on Turnkey Basis		
7	Invitation Ref. No.		27.29.0000.012.07.001.22-106		
8	Date		13/02/2022		
KEY INFORMATION					
9	Procurement Method		One Stage Two Envelope Tendering Method (OSTETM), ICT		
FUNDING INFORMATION					
10	Budget and Source of Funds		Revenue Budget (Own fund of NESCO Ltd.)		
11	Development Partners (if applicable)		N/A		
PARTICULAR INFORMATION					
12	Project / Program Code (if applicable)		N/A		
13	Project / Program Name (if applicable)		N/A		
14	Tender Package No		GR-27		
15	Tender Package Name		Same as Sl. No. 6		
16	Tender Publication Date		13/02/2022		
17	Last Date and time for Selling the tender document		29/03/2022 up to 2:00 PM (BST)		
18	Last Date & Time for Submission of Tender		30/03/2022, 11:00 AM (BST)		
19	Tender Opening Date & Time		30/03/2022, 11:10 AM (BST)		
20	Name and Address of the office(s) - Selling Tender Document - Receiving Tender Document - Opening Tender Document		Superintending Engineer (Procurement), NESCO Ltd., Bidyut Bhaban, Hetem Khan, Rajshahi.		
21	Place/Date/Time of Pre-Tender Meeting		As per Tender Document.		
INFORMATION FOR TENDERER					
22	Eligibility of Tenderer		As per Tender Document.		
23	Brief Description of Goods		Same as Sl. No. 6		
24	Brief Description of Related services		As per Tender Document.		
25	Price of Tender Document		TK 4,000/= (Four thousand) to be paid in the form of Bank Draft/Pay order (Non-refundable) in favor of "Manager (Accounts), RAO, NESCO Ltd., Rajshahi."		
26	Package No.	Identification of Package	Location	Tender Security Amount	Completion Time
	GR-27	Design, Supply, Erection, Installation, Testing and Commissioning of 04 (Four) 33/11 kV Substations at BSCIC Industrial Park, Sirajganj on Turnkey Basis	BSCIC Industrial Park, Sirajganj	**BDT 60,00,000.00** (Taka Sixty Lakh) or **USD 69,730.00** (USD Sixty-Nine Thousand Seven Hundred Thirty)	365 Days from the date of Contract
PROCURING ENTITY DETAILS					
27	Name of Official Inviting the Tender		Md. Mizanur Rahman		
28	Designation of Official Inviting Tender		Superintending Engineer (Procurement)		
29	Address of Official Inviting the Tender		Procurement Department, NESCO Ltd., Bidyut Bhaban, Hetem Khan, Rajshahi		
30	Contact details of Official Inviting the Tender:		Tel: +88-0721-774900, E-mail: se.procurement@nesco.gov.bd		
31	The Procuring entity reserves the right to accept or reject any/all tenders prior to acceptance without assigning any reason what so ever.				

(Md. Mizanur Rahman)
Superintending Engineer (Procurement)
NESCO Ltd., Bidyut Bhaban
Hetem Khan, Rajshahi

Table of Contents

Section 1. Instructions to Tenderers

A. General

1. Scope of Tender

1.1 The Purchaser named in the Tender Data Sheet **(TDS) (**hereinafter referred to as the "Purchaser") wishes to issue these Tender Documents for the supply and installation of plant & equipment incidental thereto, as specified in the **TDS** and as detailed in Section 6: Employer's Requirements.

1.2 The name of the Tender and the number and identification of its constituent lot(s) are stated in the **TDS.**

1.3 Unless otherwise stated, throughout this Tender Document definitions and interpretations shall be as prescribed in the Section 3: General Conditions of Contract.

2. Interpretation

2.1 Throughout this Tender Document

(a) the term "in writing" means communication written by hand or machine duly signed and includes properly authenticated messages by facsimile or electronic mail;

(b) if the context so requires, singular means plural and vice versa; and

(c) "day" means calendar days unless otherwise specified as working days;

(d) "Tender Document ", means the Document provided by a Purchaser to a Tenderer as a basis for preparation of its Tender;

(e) "Tender ", depending on the context, means a Tender submitted by a Tenderer for delivery of Goods and Related Services to a Purchaser in response to an Invitation for Tender ;

3. Source of Funds

3.1 The Purchaser has been allocated public funds from the source as indicated in the **TDS** and intends to apply a portion of the funds to eligible payments under the contract for which this Tender Document is issued.

3.2 For the purpose of this provision, "**public funds**" means any funds allocated to a Purchaser under Government budget, or loan, grants and credits placed at the disposal of a Purchaser through the Government by the development partners or foreign states or organizations.

3.3 Payments by the development partner, if so indicated in the **TDS**, will be made only at the request of the Government and upon approval by the development partner in accordance with the applicable Loan/Credit/Grant Agreement, and will be subject in all respects to the terms and conditions of that Agreement.

4. Corrupt, Fraudulent, Collusive, Coercive (or Obstructive in case of Development Partner) Practices

4.1 The Government and the Development Partner, if applicablerequires that the Procuring Entity as well as the Tenderers and Contracts (including , sub-contractors, agents, personnel, consultants, and service providers)shall observe the highest standard of ethics during implementation of procurement proceedings and the execution of Contracts under public funds.

4.2 For the purposes of ITT Sub Clause 4.3, the terms set forth below as follows:

(a) "corrupt practice" means offering, giving or promising to give, receiving, or soliciting either directly or indirectly, to any officer or employee of the Procuring Entity or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by the Procuring Entity in connection with a Procurement proceeding or Contract execution;

(b) "fraudulent practice" means the misrepresentation or omission of facts in order to influence a decision to be taken in a Procurement proceeding or Contract execution;

(c) "collusive practice" means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the Procuring Entity, that is designed to arbitrarily reduce the number of Tenders submitted or fix Tender prices at artificial, non-competitive levels, thereby denying the Procuring Entity the benefits of competitive price arising from genuine and open competition;

(d) "coercive practice" means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in the Procurement proceeding or the execution of a Contract, and this will include creating obstructions in the normal submission process used for Tenders.

(e) "Obstructive practice" (applicable in case of Development Partner) means deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede an 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.

4.3 Should any corrupt, fraudulent, collusive, coercive (or obstructive in case of Development Partner) practice of any kind is determined by the Procuring Entity or the Development Partner, if applicable, this will be dealt in accordance with the provisions of the Public Procurement Act and Rules and Guidelines of the Development Partners as stated in the ITT sub-clause 3.3.

In case of obstructive practice, this will be dealt in accordance with Development Partners Guidelines.

4.4 If corrupt, fraudulent, collusive, coercive (or obstructive in case of Development Partner) practices of any kind is determined by the Procuring Entity against any Tenderer or Contracts (including sub-contractors, agents, personnel, consultants, and service providers) in competing for, or in executing, a contract under public fund:

(a) Procuring Entity and/or the Development Partner shall exclude the concerned Tenderer from further participation in the concerned procurement proceedings;

(b) Procuring Entity and/or the Development Partner shall reject any recommendation for award that had been proposed for that concerned Tenderer;

(c) Procuring Entity and/or the Development Partner shall declare, at its discretion, the concerned Tenderer to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time;

(d) Development Partner shall sanction the concerned Tenderer or individual, at any time, in accordance with prevailing Development Partner' sanctions procedures, including by publicly declaring such Tenderer or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded a Development Partner-financed contract; and (ii) to be a nominated sub-contractor, consultant, manufacturer or Contractor, or service provider of an otherwise eligible firm being awarded a Development Partner-financed contract; and

(e) Development Partner shall cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Procuring Entity or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive, coercive or obstructive practices during the procurement or the execution of that Development Partner financed contract, without the Procuring Entity having taken timely and appropriate action satisfactory to the Development Partner to remedy the situation.

4.5 Tenderer shall be aware of the provisions on corruption, fraudulence, collusion, coercion (and obstruction, in case of Development Partner) of the Public Procurement Act, 2006, the Public Procurement Rules, 2008 and others as stated in GCC Clause 38.

4.6 In further pursuance of this policy, Tenderers, Contractors and their sub-contractors, agents, personnel, consultants, service providers shall permit the Government and the Development Partner to inspect any accounts and records and other documents relating to the Tender submission and

contract performance, and to have them audited by auditors appointed by the Government and/or the Development Partner during the procurement or the execution of that Development Partner financed contract.

5. Eligible Tenderers

5.1 This Invitation for Tenders is open to all potential Tenderers from all countries, except for any specified in the **TDS.**

5.2 Tenderers shall have the legal capacity to enter into the Contract under the Applicable law.

5.3 Tenderers shall be enrolled in the relevant professional or trade organisations registered in Bangladesh.

5.4 Tenderers may be a physical or juridical individual or body of individuals, or company, association or any combination of them in the form of a Joint Venture(JV) invited to take part in public procurement or seeking to be so invited or submitting a Tender in response to an Invitation for Tenders.

5.5 Tenderers shall have fulfilled its obligations to pay taxes and social security contributions under the provisions of laws and regulations of the country of its origin.

5.6 Tenderers should not be associated, or have been associated in the past, directly or indirectly, with a consultant or any of its affiliates which have been engaged by the Procuring Entity to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the works to be performed under this Invitation for Tenders.

5.7 Tenderers in its own name or its other names or also in the case of its Persons in different names shall not be under a declaration of ineligibility for corrupt, fraudulent, collusive or coercive practices as stated under ITT Sub Clause 4.4 (or obstructive practice, in case of Development Partner) in relation to the Development Partner's Guidelines in projects financed by Development Partner.

5.8 Tenderers are not restrained or barred from participating in Public Procurement on grounds of poor performance in the past under any Contract.

5.9 Tenderers shall not be insolvent, be in receivership, be bankrupt, be in the process of bankruptcy, be not temporarily barred from undertaking business and it shall not be the subject of legal proceedings for any of the foregoing.

5.10 Government-owned enterprise in Bangladesh may also participate in the Tender if it is legally and financially autonomous, it operates under commercial law, and it is not a dependent agency of the Procuring Entity.

5.11 Tenderers shall provide such evidence of their continued eligibility satisfactory to the Procuring Entity, as the Procuring Entity will reasonably request.

5.12 These above requirements for eligibility will extend, as applicable, to each JV partner and Subcontractor proposed by the Tenderers.

5.13 Tenderers shall have the up-to-date valid license(s), issued by the corresponding competent authority, as specified in the **TDS.**

6. Eligible Plant and Services

6.1 The plant and services to be supplied under the contract are eligible, unless their origin is from a country specified in the **TDS** and all expenditures under the contract will be limited to such plant, and services.

6.2 For purposes of this Clause, the term "plant" means permanent plant, equipment, machinery, apparatus, articles and things of all kinds to be provided in the facilities; and "installation services" means all those services ancillary to the supply of the Plant for the Facilities, such as transportation and provision of marine or other similar insurance, inspection, expediting, site preparation, installation, testing, pre-commissioning, commissioning, operations, maintenance, the provision of operations and maintenance manuals, training etc

6.3 For purposes of this clause, "origin" means the place where the plant, or component parts thereof are mined, grown, produced or manufactured, and from which the services are provided. Plant components are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that is substantially different in its basic characteristics or in purpose or utility from its components or 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.

6.4 The origin of plant & equipment is distinct from the nationality of the Tenderer. The nationality of the firm that produces, assembles, distributes, or sells the goods shall not determine their origin.

7. Site Visit

7.1 The Tenderer is advised to visit and examine the site where the plant is to be installed and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the tender and entering into a contract for the provision of Plant and Installation Services.

7.2 The Tenderer and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Tenderer, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against

all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.

7.3 The Tenderer should ensure that the Purchaser is informed of the visit in adequate time to allow it to make appropriate arrangements.

7.4 The costs of visiting the Site shall be at the Tenderer's own expense.

B. Tender Document

8. Tender Document: General

8.1 The Sections comprising the Tender Document are listed below, and should be read in conjunction with any Addendum issued under ITT Clause 11.

- Section 1 Instructions to Tenderers (ITT)
- Section 2 Tender Data Sheet (**TDS**)
- Section 3 General Conditions of Contract (GCC)
- Section 4 Particular Conditions of Contract (**PCC**)
- Section 5 Tender and Contract Forms
- Section 6 Employer's Requirements
- Section 7 Drawings

8.2 The Purchaser shall reject any Tender if the Tender Document was not purchased directly from the Purchaser, or through its agent as stated in the **TDS.**

8.3 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the Tender Document as well as addendum to Tender Documents.

9. Clarification of Tender Document

9.1 A prospective Tenderer requiring any clarification of the Tender Document shall contact the Purchaser in writing at the Purchasers address indicated in the **TDS** before **two-third** of time allowed for preparation and submission of Tender elapses.

9.2 The Procuring Entity is not obliged to answer any clarification request received after that date as stated under ITT Sub Clause 9.1.

9.3 The Procuring Entity shall respond in writing within five (5) working days of receipt of any such request for clarification received under ITT Sub Clause 9.1.

9.4 The Procuring Entity shall forward copies of its response to all those who have purchased the Tender Document, including a description of the enquiry but without identifying its source.

9.5 Should the Procuring Entity deem it necessary to revise the Tender Document as a result of a clarification, it will do so following the procedure under ITT Clause 11.

10. Pre-Tender Meeting

10.1 To clarify issues and to answer questions on any matter

arising in the Tender Document, the Purchaser may, if stated in the **TDS**, hold a Pre-Tender Meeting at the place, date and time as specified in the TDS. All Potential Tenderers are encouraged to attend the meeting, if it is held.

10.2 Minutes of the pre-Tender meeting, including the text of the questions raised and the responses given, together with any responses prepared after the meeting, will be transmitted within one week (7 days) after holding the meeting to all those who purchased the Tender Document and even those who did not attend the meeting.

10.3 Any amendment to the Tender Documents listed in ITT Sub-Clause 8.1 that may become necessary as a result of the pre-Tender meeting shall be made by the Purchaser exclusively through the issue of an Addendum as stated under ITT Sub-Clause 11 and not through the minutes of the pre-Tender meeting.

10.4 Non-attendance at the Pre-Tender meeting will not be a cause for disqualification of a Tenderer.

11. Addendum to Tender Document

11.1 At any time prior to the deadline for submission of Tenders, the Purchaser on its own initiative or in response to a clarification request in writing from a Tenderer, having purchased the Tender Document or as a result of a Pre-Tender meeting, may revise the Tender Document by issuing an addendum pursuant to Rule 95 of the Public Procurement Rules, 2008.

11.2 The addendum issued under ITT Sub-Clause 11.1 shall become an integral part of the Tender Document and shall have a date and an issue number and shall be circulated by fax, mail or e-mail, to Tenderers who have purchased the Tender Documents within five (5) working days of issuance of such addendum, to enable Tenderers to take appropriate action.

11.3 The Tenderer shall acknowledge receipt of an addendum.

11.4 Tenderers who have purchased the Tender Documents but have not received any addendum issued under ITT Sub-clause 11.1 shall inform the Purchaser of the fact by fax, mail or e-mail before **two-third** of the time allowed for the submission of Tenders has elapsed.

11.5 Procuring Entities shall also ensure posting of relevant addenda with the reference number and date on their website.

11.6 To give a prospective Tenderer reasonable time in which to take an amendment into account in preparing its Tender, the Purchaser may, at its discretion, extend the deadline for the submission of Tenders, pursuant to Rule 95(6) of the Public Procurement Rule, 2008 and under ITT Clause 36.

11.7 If an addendum is issued when time remaining is less than one-third of the time allowed for the preparation of

Tenders, a Purchaser shall extend the deadline by an appropriate number of days for the submission of Tenders, depending upon the nature of the Procurement requirement and the addendum. The minimum time for such extension shall not be less than seven (7) days.

C. Qualification Criteria

12. General Criteria

12.1 The Tenderer shall possess the necessary professional and technical qualifications and competence, financial resources, equipment and other physical facilities, managerial capability, specific experience, reputation, and the personnel, to perform the contract.

12.2 In addition to meeting the eligibility criteria, as stated in ITT Clause 5, the Tenderer must satisfy the other criteria stated in ITT Clauses 13 to 15 inclusive.

12.3 To qualify for multiple number of contracts/lots in a package made up of this and other individual contracts/lots for which tenders are invited in the Invitation for Tenders, the Tenderer shall demonstrate having resources and experience sufficient to meet the aggregate of the qualifying criteria for the individual contracts.

13. Litigation History

13.1 The maximum number of arbitration awards against the Tenderer over a period shall be as specified in the **TDS.**

14. Experience Criteria

14.1 Tenderers shall have the following minimum level of supply experience to qualify for supplying the Plant and Services under the contract:

(a) a minimum number of years of general experience in the role of Contractor or Subcontractor or Management Contractor as specified in the **TDS**; and

(b) Specific experience as a Contractor or Subcontractor or Management Contractor that are similar to the proposed plant and services in at least a number of contract(s) and of a minimum value over the period, as specified in the **TDS**.

15. Financial Criteria

15.1 Tenderers shall have the following minimum level of financial capacity of qualify for the supply, execution and performance of plant and services under the contract.

(a) the average annual turnover as specified in the **TDS** calculated as total certified payments received for contracts in progress or completed, during the period specified in the **TDS;**

(b) availability of minimum liquid assets or working capital or credit facilities, as specified in the **TDS**; and;

(c) satisfactory resolution of all claims, arbitrations or other litigation cases and shall not have serious

negative impact on the financial capacity of the Tenderer.

16. Personnel Capacity

16.1 The Tenderer shall have the following minimum level of personnel capacity to qualify for the performance of the plant and services under the Contract.

A Project Manager, Engineers, and other key staff with qualifications and experience as specified in the **TDS;**

17. Equipment Capacity

17.1 The Tenderer shall own suitable equipment and other physical facilities or have proven access through contractual arrangement to hire or lease such equipment or facilities for the desired period, where necessary or have assured access through lease, hire, or other such method, of the essential equipment, in full working order, as specified in the **TDS.**

18. Joint Venture, Consortium or Association

18.1 The Tenderer may participate in the procurement proceedings forming a Joint Venture, Consortium or Associations (JVCA) by an agreement, executed case by case on a non judicial stamp of value as stated in **TDS** or alternately with the intent to enter into such an agreement supported by a Letter of Intent along with the proposed agreement duly signed by all partners of the intended JVCA and authenticated by a Notary Public.

18.2 The figures for each of the partners of a JVCA shall be added together to determine the Tenderer's compliance with the minimum qualifying criteria; however, for a JVCA to qualify, lead partner and its other partners must meet the criteria stated in the **TDS.** Failure to comply with these requirements will result in rejection of the JVCA Tender. Subcontractors' experience and resources will not be taken into account in determining the Tenderer's compliance with the qualifying criteria.

18.3 Each partner of the JVCA shall be jointly and severally liable for the execution of the Contract, all liabilities and ethical and legal obligations in accordance with the Contract terms.

18.4 The JVCA shall nominate a Representative (partner-in-charge/Lead Firm) who shall have the authority to conduct all business for and on behalf of any and all the partners of the JVCA during the tendering process and, in the event the JVCA is awarded the Contract, during contract execution including the receipt of payments for and on behalf of the JVCA.

18.5 Each partner of the JVCA shall complete the JVCA Partner Information (**Form PG5A-2b)**for submission with the Tender

19. Subcontractor(s)

19.1 Tenderer, pursuant to Rule 53 of the PPR2008, is allowed to sub-contract a portion of the Supply.

19.2 The Tenderer shall specify in its Tender all portion of the Plant and Services that will be subcontracted, if any, including the entity(ies) to whom each portion will be subcontracted to, subject to the maximum allowable limit for

subcontracting of Plant and Services specified in the **TDS**.

19.3 The Purchaser may require Tenderers to provide more information about their subcontracting arrangements. If any Subcontractor is found ineligible or unsuitable to carry out the subcontracted tasks, the Procuring Entity may request the Tenderer to propose an acceptable substitute.

19.4 The Purchaser may also select nominated Subcontractor(s) to execute certain specific components of the Works and if so, those will be specified in the **TDS**.

19.5 The successful Tenderer shall under no circumstances assign the goods/works/services or any part of it to a Subcontractor

19.6 Subcontractors must comply with the provision of ITT Clause 5. For this purpose contractor shall complete the Subcontractor's information in Form **PG5A-2c** for submission with tender

19.7 If the Purchaser determines that a subcontractor is ineligible, the subcontracting of such portion of the Plants and Services assigned to the ineligible subcontractor shall be disallowed

D. Tender Preparation

20. Only one Tender

20.1 If a Tender for Plant and Services is invited on 'lot-by-lot' basis, each lot shall constitute a tender. A Tenderer shall submit only one (1) Tender for each lot, either individually or as a JVCA. The Tenderer who submits or participates in more than one (1) Tender for each lot will cause all the Tenders with that Tenderer's participation to be rejected.

21. Cost of Tendering

21.1 Tenderers shall bear all costs associated with the preparation and submission of its Tender, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the Tendering process.

22. Issuance and Sale of Tender Document

22.1 A Purchaser, pursuant to Rule 94 of the Public Procurement Rules, 2008 shall make Tender Documents available immediately to the potential Tenderers, requesting and willing to purchase at the corresponding price if the advertisement has been published in the newspaper pursuant to Rule 90 of the Public Procurement Rules, 2008.

22.2 Full contact details with mailing address, telephone and facsimile numbers and electronic mail address, as applicable, of those to whom Tender Documents have been issued shall be recorded with a reference number by the Purchaser or its agent.

22.3 There shall not be any pre-conditions whatsoever, for sale of Tender Document and the sale of such Document shall be permitted up to the day prior to the day of deadline for the submission of Tender.

23. Language of Tender

23.1 Tenders shall be written in the English language. Correspondences and documents relating to the Tender may be written in English or *Bangla.* Supporting documents and printed literature furnished by the Tenderers that are part of the Tender may be in another language, provided they are accompanied by an accurate translation of the relevant passages in the English or *Bangla* language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

23.2 Tenderers shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

24. Contents of Tender (Document establishing the tender's qualification)

24.1 The Tender prepared by the Tenderers shall comprise Two Envelope submitted simultaneously, one called the **Technical Offer** (**Envelope-01**) containing the documents listed in ITT 24.2 and other called the **Financial Offer** containing the documents listed in 24.3, both envelopes enclosed together in an outer Single envelope.

24.2 The **Technical Offer** (**Envelope-01**) prepared by the Tenderers will comprise the following:

(a) Technical Submission Letter (**Form PG5A-1a**) as furnished in Section 5: Tender and Contract Forms. This form must be completed without any alterations to its format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested

(b) Tenderer Information Sheet (**Form PG5A-2**)as furnished in Section 5: Tender and Contract Forms;

(c) Tender Security as stated under ITT Clause 32,33 and 34;

(d) Technical Proposal (Form PG5A-4) as furnished in Section 5: Tender and Contract Forms.

(e) Alternatives, if permitted, as stated under with ITT Clause 25;

(f) Written confirmation authorising the signatory of the Tender to commit the Tenderer, as stated under ITT Sub-Clause 37.3;

(g) The completed eligibility declarations, to establish its eligibility as stated under ITT Clause 5, in the Tender Submission Sheet (Form PG5A-1a & 1b), as furnished in section 5: Tender and Contract Forms;

(h) An affidavit confirming the legal capacity stating that there are no existing orders of any judicial court that prevents either the Tenderer or employees of a Tenderer entering into or signing a Contract with the Purchaser as stated under ITT clause 5;

(i) An affidavit confirming that the Tenderer is not

insolvent, in receivership or not bankrupt or not in the process of bankruptcy, not temporarily barred from undertaking their business for financial reasons and shall not be the subject of legal proceedings for any of the foregoing as stated under ITT Clause 5;

(j) A certificate issued by the competent authority stating that the Tenderer is a Tax payer having valid Tax Identification Number (TIN) and VAT registration number or in lieu any other document acceptable to the Purchaser demonstrating that the Tenderer is a genuine Tax payer and has a VAT registration number as a proof of fulfillment of taxation obligations as stated under ITT Clause 5. In the case of foreign Tenderers, a certificate of competent authority in that country of which the Tenderer is citizen shall be provided ;

(k) Documentary evidence demonstrating that they are enrolled in the relevant professional or trade organizations registered in Bangladesh or in case of foreign tenderer in their country of origin or a certificate concerning their competency issued by a professional institution in accordance with the law of the country of their origin, as stated under ITT Clause 5;

(l) The country of origin declarations, to establish the eligibility of the Plant and Services as stated under ITT Clause 6, in the Price Schedule for Plant and Services (**Form PG5A-3**) as, applicable, furnished in Section 5: Tender and Contract Forms;

(m) Documentary evidence as stated under ITT Clauses 28, that the Goods and Related Services conform to the Tender Documents;

(n) Documentary evidence as stated under ITT Clause 29 that the Tenderer's qualifications conform to the Tender Documents;

(o) Documents establishing legal and financial autonomy and compliance with commercial law, as stated under ITT Sub-clause 5.3 in case of government owned entity; and

(p) In addition to the requirements stated under ITT Sub Clause 18.1, Tenders submitted by a JVCA or proposing a Subcontractor shall include.

i. a Joint Venture Agreement entered into by all partners, executed on a non-judicial stamp of value or equivalent as stated under ITT Sub Clause 18.1; or

ii. a Letter of Intent along with the proposed agreement duly signed by all partners of the intended JVCA with the declaration that it will

execute the Joint Venture agreement in the event the Tenderer is successful;

iii. the JVCA Partner Information (**Form PG5A-2b**);

iv. the Subcontractor Information (**Form PG5A-2c**).

(q) the completed Specifications Submission and Compliance Sheet **(Form PG5A-4a)**as stated under ITT clause 28.1;

(r) Any other document as specified in the **TDS.**

24.3 The Financial Offer (**Financial Envelope -02**) prepared by the Tenderers shall comprise the following:

(a) The Financial offer Submission Letter (**Form PG5A-1b**) as furnished in Section 5:

(b) The Tenderer shall submit the completed Price Schedule for Plant and Services (**Form PG5A-3**), according to their origin as appropriate as furnished in section 5: Tender and Contract Forms.

(c) the written confirmation authorizing the signatory of the Tender to commit the Tenderer, as stated under ITT Sub Clause 37.3;

(d) any other document as specified in the **TDS**.

25. Alternatives

25.1 Unless otherwise stated in the **TDS**, alternatives shall not be considered.

26. Tender Prices, Discounts & Price adjustment

26.1 Unless otherwise **specified in the TDS,** tenderers shall quote for the entire Plant and Installation Services on a "single responsibility" basis such that the total tender price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the tender document in respect of the design, manufacture, including procurement and subcontracting (if any), delivery, construction, installation and completion of the plant. This includes all requirements under the Contractor's responsibilities for testing, pre-commissioning and commissioning of the plant and, where so required by the tender document, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as may be specified in the Tender Document, all in accordance with the requirements of the General Conditions of Contract. Items against which no price is entered by the Tenderer will not be paid for by the Purchaser when executed and shall be deemed to be covered by the prices for other items.

26.2 Tenderers are required to quote the price for the commercial, contractual and technical obligations outlined in the tender document

26.3 Tenderers shall give a breakdown of the prices in the manner and detail called for in the Price Schedules included in Section 5, Tender and Contract Forms.

26.4 Depending on the scope of the Contract, the Price Schedules may comprise up to the six (6) schedules listed below. Separate numbered Schedules included in Section IV, Tender Forms, from those numbered 1-4 below, shall be used for each of the elements of the Plant and Installation Services. The total amount from each Schedule corresponding to an element of the Plant and Installation Services shall be summarized in the schedule titled Grand Summary, (Schedule 5), giving the total tender price(s) to be entered in the Letter of Tender.

Schedule No. 1: Plant (including Mandatory Spare Parts) Supplied from Abroad

Schedule No. 2: Plant (including Mandatory Spare Parts) Supplied from within the Employer's Country

Schedule No. 3: Civil Works

Schedule No. 4: Substation Wise Summary

Schedule No. 5: Grand Summary

Schedule No. 6: Supplier-recommended spare parts

Tenderers shall note that the plant and equipment included in Schedule Nos. 1 and 2 above **exclude** materials used for civil, building and other construction works. All such materials shall be included and priced under Installation Services.

26.5 In the Schedules, tenderers shall give the required details and a breakdown of their prices as follows:

a) Plant to be supplied from abroad (Schedule No. 1):

The price of the plant shall be quoted on CIP-named place of destination/CIF basis as **specified in the TDS** and as applicable.

(b) Plant manufactured within the Purchaser's country (Schedule No. 2):

i) The price of the plant shall be quoted on an EXW INCOTERM basis (such as "ex-works," "ex-factory," "ex-warehouse" or "off-the-shelf," as applicable),

(ii) Sales tax and all other taxes payable in the Employer's country on the plant if the contract is awarded to the Tenderer, and

(iii) The total price for the item.

(c) Design Services ().

(d) Installation Services shall be quoted separately () and shall include rates or prices for local transportation to named place of final destination as **specified in the TDS,** insurance and other services incidental to delivery of the plant, all labor, contractor's equipment, temporary works, materials, consumables and all matters and things of whatsoever nature, including operations and

maintenance services, the provision of operations and maintenance manuals, training, etc., where identified in the Tender Document, as necessary for the proper execution of the installation and other services, including all taxes, duties, levies and charges payable in the Employer's country as of twenty-eight (28) days prior to the deadline for submission of tenders.

(e) Recommended spare parts shall be quoted separately (Schedule 6) as specified in either subparagraph (a) or (b) above in accordance with the origin of the spare parts

26.6 The current edition of INCOTERMS, published by the International Chamber of Commerce shall govern.

26.7 The prices shall be either fixed or adjustable as specified in the **TDS**.

26.8 In the case of **Fixed Price**, prices quoted by the Tenderer shall be fixed during the Tenderer's performance of the contract and not subject to variation on any account. A tender submitted with an adjustable price quotation will be treated as non-responsive and rejected.

26.9 In the case of **Adjustable Price**, prices quoted by the Tenderer shall be subject to adjustment during performance of the contract to reflect changes in the cost elements such as labor, material, transport and contractor's equipment in accordance with the procedures specified in the corresponding Appendix to the Contract Agreement. A tender submitted with a fixed price quotation will not be rejected, but the price adjustment will be treated as zero. Tenderers are required to indicate the source of labor and material indices in the corresponding Form in Section 5, Tender and Contract Forms

26.10 If so indicated in ITT 1.2, tenders are to be invited for individual lots or for any combination of lots (packages). Tenderers wishing to offer any price reduction (discount) for the award of more than one lot shall specify in their Tender Submission Letter the price reductions applicable to each package, or alternatively, to individual Contracts within the package, and the manner in which the price reductions will apply.

26.11 Tenderers wishing to offer any unconditional discount shall specify in their Letter of Tender the offered discounts and the manner in which price discounts will apply.

26.12 If so indicated under ITT Sub Clause 26.9, Tenders are being invited with a provision for price adjustments. The unit rates or prices quoted by the Tenderer are subject to adjustment during the performance of the Contract in accordance with the provisions of the relevant GCC Clause and, in such case the Employer shall provide the indexes and weightings or coefficients in **Appendix to the**

Tender for the price adjustment formulae specified in the **PCC.**

26.13 The Employer may require the Tenderer to justify its proposed indexes, if any of those as stated under ITT Sub Clause 26.12, are instructed to be quoted by the Tenderer in **Appendix to the Tender**.

26.14 The price adjustment stated under ITT Sub Clause 26.9and 26.12 shall be dealt with in accordance with the provisions in Section 12 and 22 of the Public Procurement Act, 2006 and Rule 5 and 38 of the Public Procurement Rules, 2008.

27. Tender Currency

27.1 For expenditures that will be incurred in Bangladesh, the Tenderer shall quote the prices in Bangladesh Taka

27.2 Suppliers offering Goods manufactured or assembled in Bangladesh are permitted to submit their Tender in a combination of local and foreign currencies.

27.3 In case of National Tender, all quoted price shall be in local currency.

27.4 In case of international competitive tender, for expenditures that will be incurred outside Bangladesh, the Tenderer may quote the prices as specified in **TDS**.

28. Documents Establishing the Conformity of Plant, and Services

28.1 To establish the conformity of the plant and services to the Tender Documents, the Tenderer shall furnish as part of its Tender the documentary evidence that the Goods and Related services conform to the technical specifications and standards in Section 6, Employer's Requirement.

a. a detailed description of the essential technical and performance characteristics of the plant and services, including the functional guarantees of the proposed plant and services, in response to the Specification

b. a list giving full particulars, including available sources, of all spare parts and special tools necessary for the proper and continuing functioning of the plant for the period named in the **TDS**, following completion of plant and services in accordance with provisions of contract; and

c. a commentary on the Employer's Specification and adequate evidence demonstrating the substantial responsiveness of the plant and services to those specifications. Tenderers shall note that standards for workmanship, materials and equipment designated by the Employer in the Tender Document are intended to be descriptive (establishing standards of quality and performance) only and not restrictive. The Tenderer may substitute alternative standards, brand names and/or catalog numbers in its tender, provided that it demonstrates to the Employer's satisfaction that the substitutions are substantially equivalent or superior to the standards designated

in the Specification.

29. Documents Establishing Eligibility of the Tenderer

29.1 Tenderers, if applying as a sole Tenderer, shall submit documentary evidence to establish its eligibility as stated under ITT Clause 5 and, in particular, it shall:

(a) complete the eligibility declarations in the Tender Submission Letter (**Form PG5A-1a**);

(b) complete the Tenderer Information (**Form PG5A-2a**);

(c) complete Subcontractor Information (**Form PG5A-2c**), if it intends to engage any Subcontractor(s).

29.2 Tenderers, if applying as a partner of an existing or intended JV shall submit documentary evidence to establish its eligibility as stated under ITT Clause 5 and, in particular, in addition to as stated underITT Sub Clause 29.1, it shall:

(a) provide for each JV partner, completed JV Partner Information (**Form PG5A-2b**);

(b) provide the JV agreement or Letter of Intent along with the proposed agreement of the intended JV as stated under ITT Sub Clause 18.1

30. Validity Period of Tender

30.1 Tender validities shall be determined on the basis of the complexity of the Tender and the time needed for its examination, evaluation, approval of the Tender and issuance of the Notification of Award (NOA).

30.2 Tenders shall remain valid for the period specified in the **TDS** after the date of Tender submission deadline prescribed by the Purchaser, as stated under ITT Clause 39. A Tender valid for a period shorter than that specified will be rejected by the Purchaser as non- responsive.

31. Extension of Tender Validity and Tender Security

31.1 In justified exceptional circumstances, prior to the expiration of the Tender validity period, the Purchaser following Rule 21 of the Public Procurement Rules, 2008 may solicit, **not later than ten (10) days** before the expiry date of the Tender validity, compulsorily all the Tenderers' consent to an extension of the period of validity of their Tenders.

31.2 The request for extension of Tender validity period shall state the new date of the validity of the Tender.

31.3 The request from the Purchaser and the responses from the Tenderers will be made in writing.

31.4 Tenderers consenting in writing to the request made by the Purchaser under ITT Sub-Clause 30.1 shall also correspondingly extend the validity of its Tender Security for twenty-eight (28) days beyond the new date for the expiry of Tender validity.

31.5 Tenderers consenting in writing to the request under ITT Sub-Clause 31.1 shall not be required or permitted to modify its Tender in any circumstances.

31.6 If the Tenderers are not consenting in writing to the request made by the Purchaser under ITT Sub-Clause 31.1, its Tender will not be considered for subsequent evaluation.

32. Tender Security

32.1 The Tender Security and its amount shall be determined sufficient to discourage the submission of frivolous and irresponsible tenders pursuant to Rule 22 of the Public Procurement Rule2008 and shall be expressed as a rounded fixed amount and, shall not be stated as a precise percentage of the estimated total Contract value.

32.2 The Tenderer shall furnish as part of its Technical offer (**envelope-1**) Tender, in favour of the Purchaser or as otherwise directed on account of the Tenderer, a ender security in original form (not copy) and in the amount as specified in **TDS.**

32.3 If the Tender is a Joint Venture, the Tenderer shall furnish as part of its Tender, in favour of the Procuring Entity or as otherwise directed on account of the title of the existing or intended JVCA or any of the partners of that JVCA or in the names of all future partners as named in the Letter of Intent of the JVCA, a Tender Security in original form and in the amount as stated under ITT Sub Clause 32.1.

33. Form of Tender security

33.1 The Tender Security shall:

(a) In case of NCT, at the Tendere's option, be either;

(i) In the form of a Bank Draft, Pay order or

(ii) in the form of an irrevocable bank guarantee issued by any scheduled Bank of Bangladesh, in the format **(Form PG5A-6)** furnished in Section 5: Tender and Contract Forms.

(b) In case of ICT, in the form of an irrevocable bank guarantee issued by an internationally reputable bank and shall require to be endorsed by its any correspondent bank located in Bangladesh, to make it enforceable, in the format **(Form PG5A-6)** furnished in Section 5: Tender and Contract Forms;

33.2 Tender security shall be payable promptly upon written demand by the Purchaser in the case of the conditions listed in ITT Clause 36 being invoked; and

33.3 Tender security shall remain valid for at least twenty eight (28) days beyond the expiry date of the Tender Validity in order to make a claim in due course against a Tenderer in the circumstances detailed under ITT Clause 36.

34. Authenticity of Tender Security

34.1 The authenticity of the Tender security submitted by a Tenderer shall be examined and verified by the Purchaser in writing from the Bank issuing the security, prior to finalization of the Evaluation Report pursuant to Rule, 24

of the Public Procurement Rule, 2008.

34.2 If a Tender Security is found to be not authentic, the Tender which it covers shall not be considered for subsequent evaluation and in such case the Purchaser shall proceed to take punitive measures against that Tenderer as stated under ITT Sub-Clause 4.6, pursuant to Rule 127 of the Public Procurement Rules, 2008 and in accordance with Section 64(5) of the Public Procurement Act, 2006.

34.3 Tender not accompanied by a valid Tender Security as stated under Sub-Clause 29, 30 and 31, shall be considered as non-responsive.

35. Return of Tender Security

35.1 No Tender security shall be returned by the Tender Opening Committee (TOC) during and after the opening of the Tenders pursuant to Rule 26 of the Public Procurement Rules 2008.

35.2 No Tender security shall be returned to the Tenderers before contract signing, except to those who are found non-responsive.

35.3 Tender securities of the non-responsive Tenders shall be returned immediately after the Evaluation Report has been approved by the Purchaser.

35.4 Tender securities of the responsive Tenderers shall be returned only after the lowest evaluated responsive Tenderer has submitted the performance security and signed the contract, that being even before the expiration of the validity period specified in Clause 30.

35.5 Tender Securities of the Tenderers not consenting within the specified date in writing to the request made by the Purchaser under ITT Sub-Clause 31.1 in regard to extension of its Tender validity shall be discharged or returned forthwith.

36. Forfeiture of Tender Security.

36.1 The Tender security pursuant to Rule 25 of the Public Procurement Rules,2008 may be forfeited if a Tenderer:

(a) withdraws its Tender after opening of Tenders but within the validity of the Tender as stated under ITT Clauses 30,and 31, pursuant to Rule 19 of the Public Procurement Rules 2008; or

(b) refuses to accept a Notification of Award as stated under ITT Sub-Clause 65.3, pursuant to Rule 102 of the Public Procurement Rules 2008; or

(c) fails to furnish performance security as stated under ITT Sub-Clause 66.2, pursuant to Rule 102 of the Public Procurement Rules 2008; or

(d) refuses to sign the Contract as stated under ITT Sub-Clause 70.2 pursuant to Rule 102 of the Public Procurement Rules 2008; or

(e) does not accept the correction of the Tender price following the correction of arithmetic errors as stated under ITT Clause 55, pursuant to Rule 98(11) of the Public Procurement Rules 2008.

37. Format and Signing of

37.1 Tenderers shall prepare one (1) original of the documents

Tender

comprising the **Technical Offer** as described in ITT Clause 24.2 and clearly mark it "**ORIGINAL OF TECHNICAL OFFER**" In addition, the Tenderers shall prepare the number of copies of the Technical Offer, as specified in the **TDS** and clearly mark each of them "**COPY OF THE TECHNICAL OFFER**." In the event of any discrepancy between the original and the copies, the **ORIGINAL** shall prevail.

37.2 Tenderers shall prepare one (1) original of the documents comprising the Financial Offer as described in ITT Clause 24.3 and clearly mark it "**ORIGINAL OF FINANCIAL OFFER**" In addition, the Tenderers shall prepare the number of copies of the Financial Offer, as specified in the **TDS** and clearly mark each of them "**COPY OF THE FINANCIAL OFFER**" In the event of any discrepancy between the original and the copies, the **ORIGINAL** shall prevail.

37.3 Alternatives, if permitted under ITT Clause 25, shall be clearly marked "Alternative".

37.4 The original and each copy of the Offer shall be typed or written in indelible ink and shall be signed by the Person duly authorized to sign on behalf of the Tenderer. This Tender specific authorization shall be attached to the Technical Offer Submission Letter (**Form PW5A-1a**) and Financial Offer Submission Letter (**Form PW5A-1b**). The name and position held by each Person(s) signing the authorization must be typed or printed below the signature. All pages of the original and of each copy of the Tender, except for un-amended printed literature, shall be numbered sequentially and signed by the person signing the Tender.

37.5 Any interlineations, erasures, or overwriting will be valid only if they are signed or initialled by the Person (s) signing the Tender.

E. Tender Submission

38. Sealing, Marking and Submission of Tender

38.1 Tenderers shall enclose the original of **Technical Offer** in one (1) envelope and all the copies of the **Technical Offer**, including the alternatives, if permitted under ITT Clause 25, in another envelope, duly marking the envelopes as "**ORIGINAL OF TECHNICAL OFFER**" "**ALTERNATIVES**" (if permitted), "**COPY OF TECHNICAL OFFER","ALTERNATIVES" (if permitted)** These sealed envelopes for the original and copies of the technical Tender shall then be enclosed and sealed in one single envelope and clearly mark it "**Envelope-01: TECHNICAL OFFER".**

38.2 The inner and outer envelopes of Technical Offer shall:

(a) be addressed to the Procuring Entity at the address as stated underITT Sub Clause 39.1;

(b) bear the name of the Tender and the Tender Number

as stated under ITT Sub Clause 1.1;

(c) bear the name and address of the Tenderer;

(d) bear a statement "DO NOT OPEN BEFORE ---------- ----------" the time and date for Tender opening as stated under ITT Sub Clause 45.2

(e) bear any additional identification marks as specified in the **TDS.**

38.3 Tenderers shall enclose the original of **Financial Offer** in one (1) envelope and all the copies of the **Financial Offer** in another envelope, duly marking the envelopes as "**ORIGINAL OF FINANCIAL OFFER**" & "**COPY OF FINANCIAL OFFER".** These sealed envelopes for the original and copies of the Financial Tender shall then be enclosed and sealed in one single envelope and clearly mark it "**ENVELOPE-02: FINANCIAL OFFER.**

38.4 The inner and outer envelopes of Financial Offer shall:

(a) be addressed to the Procuring Entity at the address as stated underITT Sub Clause 39.1;

(b) bear the name of the Tender and the Tender Number as stated under ITT Sub Clause 1.1;

(c) bear the name and address of the Tenderer;

(d) bear a statement "**DO NOT OPEN BEFORE THE TECHNICAL OFFER EVALUATION AND APPROVAL".**

(e) bear any additional identification marks as specified in the **TDS.**

38.5 **The Envelope-01** as stated in ITT Clause 38.1 and **Envelope-02** as in ITT Clause 38.3 shall then be enclosed and sealed in one single outer envelope which shall contain the information as stated under ITT Clause 38.2 (a) to (e) & ITT Clause 38.4 (a) to (e)

38.6 Tenderers are solely and entirely responsible for pre-disclosure of Tender information if the envelope(s) are not properly sealed and marked.

38.7 Tenders shall be delivered by hand or by mail, including courier services at the address(s) as stated under ITT Sub Clause 39.1.

38.8 The Procuring Entity will, on request, provide the Tenderer with acknowledgement of receipt showing the date and time when it's Tender was received.

39. Deadline for Submission of tenders

39.1 Tenders shall be delivered to the Purchaser at the address specified in the **TDS** and no later than the date and time specified in the **TDS**.

39.2 The Purchaser may, at its discretion on justifiably acceptable grounds duly recorded, extend the deadline for submission of Tender as stated under ITT Sub Clause

39.1, in which case all rights and obligations of the Purchaser and Tenderers previously subject to the deadline will thereafter be subject to the new deadline as extended.

39.3 If submission of Tendersis allowed in more than one location, the date and time, for submission of Tenders for both the primary and the secondary place(s), shall be the "**same and not different**" as specified in the **TDS.**

39.4 The Procuring Entity shall ensure that the Tenders received at the secondary place(s) are hand-delivered at the primary place as stated under ITT Sub Clause 39.1, within THREE (3) HOURS after the deadline for submission of Tenders at the secondary place (s), in case of MULTIPLE DROPPING as stated under ITT Sub Clause 39.3, as specified in the **TDS**.

40. Late tender

37.6 Any Tender received by the Purchaser after the deadline for submission of Tenders as stated under ITT Clause 39, shall be declared LATE, rejected, returned unopened to the Tenderer.

41. Modification, Substitution or Withdrawal of Tenders

41.1 Tenderers may modify, substitute or withdraw its Tender after it has been submitted by sending a written notice duly signed by the authorized signatory and properly sealed, and shall include a copy of the authorization; provided that such written notice including the **affidavit** is received by the Procuring Entity prior to the deadline for submission of Tenders as stated under ITT Clause 39

42. Tender Modification

42.1 Tenderers shall not be allowed to retrieve its original Tender, but shall be allowed to submit corresponding modification either to its original **Technical Offer** or **Financial Offer** or both, marked as **"MODIFICATION FOR TECHNICAL OFFER(MTO)" or "MODIFICATION FOR FINANCIAL OFFER (MFO)"**with two separate envelopes. The envelope/envelopes marked as MTO and/or MFO then be enclosed and sealed in one single outer envelope with a written notice duly as stated under ITT Sub Clause 41.1. The outer envelope shall contain the information as stated under ITT Sub Clause 38.2(a) to (d) and clearly marked as **"MODIFICATION (M)".**

43. Tender Substitution

43.1 Tenderers shall not be allowed to retrieve its original Tender, but shall be allowed to submit another **Technical Offer** or **Financial Offer** or both, marked as **"SUBSTITUTION FOR TECHNICAL OFFER (STO)" or "SUBSTITUTION FOR FINANCIAL OFFER (SFO)"**with two separate envelopes. The envelope/envelopes marked as STO and/or SFO then be enclosed and sealed in one single outer envelope with a written notice duly as stated under ITT Sub Clause 41.1. The outer envelope shall contain the information as stated under ITT Sub Clause 38.2(a) to (d) and clearly marked as **"SUBSTITUTION (S)".**

44. Withdrawal of Tender

44.1 The Tenderer shall be allowed to withdraw its Tender by a

Letter of Withdrawal marked as “WITHDRAWAL” prior to the deadline for submission of Tenders as stated under ITT Clause 39.

F. Tender Opening and Evaluation

45. Tender Opening

45.1 Only the **Technical Offer (Envelope-01**) shall be opened immediately after the deadline for submission of Tenders at the primary place as specified in the **TDS** but not later than **ONE HOUR,** after expiry of the submission deadline at the same primary place unless otherwise stated under ITT Sub Clause 39.2. But with in **THREE HOURS** after the dateline of submission of tender at primary place in case of multiple dropping. Tender opening shall not be delayed on the plea of absences of Tenderers or his or her representatives. Financial offer **(Envelope-02)** shall not open with Technical offer (**Envelope-01)** and shall be kept unopened at the Custody of the Head of the Procuring Entity or his Authorised Officer (AO).

45.2 Persons not associated with the Tender may not be allowed to attend the public opening of Technical Offers.

45.3 Tenderers’ representatives shall be duly authorised by the Tenderer. Tenderers or their authorised representatives will be allowed to attend and witness the opening of **Technical Offers**, and will sign a register evidencing their attendance. Technical Offers Opening shall not be delayed on the plea of absence of Tenderers or his or her representatives.

45.4 The authenticity of withdrawal or substitution of, or modifications to original Tender, if any made by a Tenderer in specified manner, shall be examined and verified by the Tender Opening Committee (TOC) based on documents submitted as stated under ITT Sub Clause 41.1. Any envelope related to financial modification, substitute shall be recorded but not open with technical offer.

45.5 Verify (**M), (S), (W), (A), (O) by following step by steps**

(a) **Step 1:** envelopes marked “**Withdrawal (W)”** shall be opened and “Withdrawal” notice read aloud & recorded in the opening sheet. After verify the withdrawal letter is genuine, corresponding tender shall not be opened, but returned unopened to the Tenderer by Procuring Entity (**PE**) at a late time. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice shall be as stated in 41.1& 44.1 and in such case the Tender shall be opened and recorded.

(b) **Step 2:** the remaining Tenders will be sorted out and those marked **“SUBSTITUTION (S)”** or “**MODIFICATION (M)”** of Tender will be linked with their corresponding Original Tender.

(c) **Step 3:** outer envelopes marked “**SUBSTITUTION (S)**” shall be opened. The inner envelopes containing

the "Substitution of Technical Offer (**STO**)" and/or "Substitution of Financial Offer (**SFO**)" shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Tenderer unopened by the Procuring Entity at a later time immediately after opening of Technical Offers. Only the Substitution of Technical Offer, if any, shall be opened, read out, and recorded. Substitution of Financial Offer will remain unopened in accordance with ITT Sub Clause 45.1. No envelope shall be substituted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out and recorded at Technical Offer opening.

(d) **Step 4:** outer envelopes marked "**MODIFICATION (M)**" shall be opened. No Technical Offer and/or Financial Offer shall be modified unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Offers. Only the Technical Offers, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Financial Offers, both Original as well as Modification, will remain unopened in accordance with ITT Sub Clause 45.1

(e) **Step5:** if so specified in this Tender Document, the envelopes marked "Alternative of Technical Offer (ATO)" shall be opened and read aloud with the corresponding Technical Offer and recorded.

45.6 Ensuring that only the correct (**MTO), (STO), (ATO), (OTO)** envelopes are opened, details of each Technical Offer will be dealt with as follows:

(a) the Chairperson of the **TOC** will read aloud each Technical Offer and record in the Technical Offer Opening Sheet (**TOOS):**

(i) the name and address of the Tenderer;

(ii) state if it is a withdrawn, modified, substituted or original Technical Offer;

(iii) any alternatives;

(iv) record the rejection of the Tender which submitted Technical Offer and Financial Offer together in one envelope.

(v) the presence or absence of any requisite Tender Security; and

(vi) such other details as the Procuring Entity, at its discretion, may consider appropriate.

(b) Only Technical Offer and alternatives read aloud at the Technical Offer Opening will be considered in evaluation.

(c) all pages of the original version of the Technical Offer, except for un-amended printed literature, will

be initialled by members of the TOC**. Remember, No financial Offer shall be open with Technical Offer**

45.7 Upon completion of Technical Offer opening, all members of the **TOC** and the Tenderers or Tenderer's duly authorised representatives attending the Technical Offer opening shall sign by name, address, designation, the TOS, copies of which shall be issued to the Head of the Procuring Entity or an officer authorised by him or her and also to the members of the TOC and any authorised Consultants and, to the Tenderers immediately.

45.8 The omission of a Tenderer's signature on the record shall not invalidate the contents and effect of the record under ITT Sub Clause 45.7

45.9 No Tender i.e., Technical or Financial Offer shall be rejected at the Tender opening stage except the **LATE** Tenders as stated in the ITT Clause 40.

46. Evaluation of Tenders

46.1 Technical Offers shall be examined and evaluated only on the basis of the criteria specified in the Tender Document.

46.2 **Tender Evaluation Committee** (**TEC**) shall examine, evaluate and compare Tenders that are responsive to the requirements of Tender Documents in order to identify the successful Tenderer.

47. Evaluation Process

47.1 TEC may consider a Tender Offer as responsive in the Evaluation, only if it is submitted in compliance with the mandatory requirements set out in the Tender Document. The evaluation process should begin immediately after Technical Offer opening following Two steps:

(a) Preliminary examination

(b) Technical examination and responsiveness

48. Preliminary Examination

48.1 Compliance, adequacy and authenticity of the documentary evidences for meeting the qualification criterion specified in the corresponding section of the Tender document shall have to be preliminarily examined and verified.

48.2 The TEC shall firstly examine the Tenders to confirm that all documentation requested in ITT Clause 24 has been provided. Examination of the compliance, adequacy and authenticity of the documentary evidence may follow the order below:

(a) verification of the completeness of the eligibility declaration in the Tender Submission Letter (Form PG5A-1), to determine the eligibility of the tenderer as stated under ITT Sub-Clause 24(h). Any alterations to its format, filling in all blank spaces with the information requested, failing which the tender may lead to rejection of the Tender;

(b) verification of that the Tenderer is enrolled in the relevant professional or trade organisations as stated under ITT Clause 24(l);

(c) verification of the eligibility in terms of legal capacity and fulfilment of taxation obligation by the tenderer in accordance as stated under ITT Sub-Clause 24(i) and 24(k);

(d) verification of eligibility that the tenderer is not insolvent, in receivership, bankrupt, not in the process of bankruptcy, not temporarily barred as stated under ITT Sub-Clause 24(j);

(e) verification of eligibility of Tenderer's country of origin as stated under ITT Sub-Clause 24(b);

(f) verification of the written authorization confirming the signatory of the Tenderer to commit the Tender has been attached with Tender Submission Letter (Form PG5A-1) as stated under ITT Sub-Clause 24(g); in order to check the authenticity of Tender and Tenderer itself ;

(g) verification of the Tender Security as stated under ITT Sub-Clause 24(d); and

48.3 The TEC shall confirm that the above documents and information have been provided in the Tender and the completeness of the documents and compliance of instructions given in corresponding ITT Clauses shall be verified, failing which the tender shall be considered rejection of that tender.

49. Technical Evaluation and Responsiveness

49.1 Only those Tenders surviving preliminary examination need to be examined in this phase.

49.2 Secondly, the TEC will examine the adequacy and authenticity of the documentary evidence which may follow the order below:

(a) verification of the completeness of the country of origin declaration in the Price Schedule for Plant and Services (Form PG5A-3) as furnished in Section 5: Tender and Contract Forms to determine the eligibility of the Goods and Related Services as stated under ITT Sub Clause 24(m).

(b) verification and examination of the documentary evidence and completed Technical Proposal (Form PG5A-4) as furnished in Section 5: Tender and Contract Forms to establish the conformity of the Goods and Related Services to the Tender Documents as stated under ITT Sub Clause 24(e) and 24(n).

(c) verification and examination of the documentary evidence that the Tenderer's qualifications conform to the Tender Documents and the Tenderer meets each of the qualification criterion specified in Sub-Section C, Qualification Criteria as stated under ITT Sub Clause 24(o).

(d) verification and examination of the documentary evidence that Tenderer has met all the requirements

in regards under Section 6, Employer's Requirements, without any material deviation or reservation.

(e) verification and examination of the documentary evidence and completed Specification Submission Sheet **(Form PG5A-4a**) to determine the conformity of the Goods and related services .

49.3 TEC may consider a Tender as responsive in the evaluation, only if comply with the mandatory requirements as stated under Clause 49.2.

49.4 The TEC's determination of a Tender's responsiveness is to be based on the documentary evidence as requested in Clause 49.2 without recourse to extrinsic evidence.

49.5 Information contained in a Tender, that was not requested in the Tender Document shall not be considered in evaluation of the Tender.

49.6 If a Tender is not responsive to the mandatory requirements set out in the Tender Document it shall be rejected by the TEC and shall not subsequently be made responsive by the Tenderer by correction of the material deviation, reservation.

49.7 A material deviation or reservation is one-

(a) which affects in any substantial way the scope, quality, or performance of the Goods and Related Services and Tenderer's qualifications mentioned in the Tender Document

(b) which limits in any substantial way, inconsistent with the Tender Documents, the Purchaser's rights or the Tenderer's obligations under the Contract; or

(c) whose rectification would anyway affect unfairly the competitive position of other Tenderers presenting responsive Tenders.

49.8 During the evaluation of Tender, the following definitions apply:

(a) Deviation" is a departure from the requirements specified in the Tender Document;

(d) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Tender Document;

49.9 A TEC may regard a Tender as responsive, even if it contains-minor or insignificant deviations, which do not meaningfully alter or depart from the technical specifications, characteristics and commercial terms and conditions or other requirements set out in the Tender Document; errors or oversights, which if corrected, would not alter the key aspects of the Tender.

50. Clarification on Technical Offer

50.1 TEC may ask Tenderers for clarification of their Technical Offers in order to facilitate the examination and evaluation

of Technical Offers. The request for clarification by the TEC and the response from the Tenderer shall be in writing, and Technical Offers clarifications which may lead to a change in the substance of the Technical Offers or in any of the key elements of the Technical Offers as stated under ITT Sub Clause 49.2, will neither be sought nor be permitted.

50.2 Any request for clarifications by the TEC shall not be directed towards making an apparently non-responsive Tender responsive and reciprocally the response from the concerned Tenderer shall not be articulated towards any addition, alteration or modification to its Technical Offer.

50.3 If a Tenderer does not provide clarifications of its Technical Offer by the date and time, its Tender shall not be considered in the evaluation

51. Restrictions on Disclosure of Information

51.1 Following the opening of Technical Offers until issuance of Notification of Award no Tenderer shall, unless requested to provide clarification to its Tender or unless necessary for submission of a complaint, communicate with the concerned Procuring Entity

51.2 Tenderers shall not seek to influence in anyway, the examination and evaluation of the Tenders

51.3 Any effort by a Tenderer to influence the Procuring Entity in its decision concerning the evaluation of Tenders, Contract awards may result in the non-responsiveness of its Tender as well as further action in accordance with Section 64 (5) of the Public Procurement Act, 2006.

51.4 All clarification requests shall remind Tenderers of the need for confidentiality and that any breach of confidentiality on the part of the Tenderer may result in their Tender being non-responsive.

52. Approval of Technical Offer

52.1 TEC shall prepare the Technical Offer Evaluation Report and shall directly submit the Evaluation Report to the Head of the Procuring Entity **(HOPE) or Authorized Officer for approval.**

53. Financial Offer Opening

53.1 After receiving approval of the Technical Offer Evaluation Report, Financial Offer **(Envelope-2)** of only the Responsive Tenderers who have been determined as qualified to the requirements of the Technical Offer, shall be opened publicly, The Date, time and place of Financial Offer Opening shall be communicated to the Responsive Tenderers in writing by issuing a Financial Offer Opening notice not less than **SEVEN DAYS** before the opening.

53.2 Ensuring that only the correct **MFO, SFO, OFO** envelopes of the Responsive Tenderers shall be opened, in the presence of the Responsive Tenderer's representatives who choose to attend, on the date, time and at the place as notified by the Procuring Entity in accordance with ITT Clause 53.1. Details of each Financial Offer will be dealt with as follows:

(a) the Chairperson of the Tender Evaluation Committee will read aloud each Financial Offer and record in the Financial Offer Opening Sheet (**FOOS**):

(i) the name and address of the Tenderer;

(ii) state if it is a modified, substituted or original Financial Offer;

(iii) the Tender Price;

(iv) the number of initialled corrections;

(v) any discounts; and

(vi) any other details as the Procuring Entity, at its discretion, may consider appropriate

(b) only the discounts and alternatives read aloud and recorded at the Financial Offer Opening will be considered in Financial Offer Evaluation. No Tenders shall be rejected at the opening of the Financial Offer.

(c) all pages of the original version of the Financial Offer, except for un-amended printed literature, will be initialled by members of the Tender Evaluation Committee.

(d) The Procuring Entity shall, in writing, notify the Non-responsive Tenderers who have not been determined as qualified to the requirements of the Technical Offer and shall return their Financial Offers (Envelope-02) unopened after signing of the contract.

54. Clarification on Financial Offer

54.1 TEC may ask Tenderers for clarification of their Financial Offers, about the breakdowns of unit rates, in order to facilitate the examination and evaluation of Financial Offers. The request for clarification by the TEC and the response from the Tenderer shall be in writing.

54.2 Changes in the Tender price shall not be sought or permitted, except to confirm the correction of arithmetical errors discovered by the TEC in the evaluation of the Tenders, as stated under ITT Sub Clause 55.1.

54.3 If a Tenderer does not provide clarifications of its Financial Offer by the date and time, its Tender shall not be considered in the evaluation.

54.4 Requests for clarifications on Financial Offers shall be duly signed only by the TEC Chairperson.

55. Correction of Arithmetical Errors

55.1 The TEC shall correct any arithmetic errors that are discovered during the examination of Tenders, and shall

promptly notify the concerned Tenderer(s) of any such correction(s) pursuant to Rule 98(11) of the Public Procurement Rule, 2008.

55.2 Provided that the Tender is responsive, TEC 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 TEC there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted will govern and the unit price will be corrected;

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the sub-totals shall prevail and the total shall be corrected.

55.3 Any Tenderer that does not accept the correction of the Tender amount following correction of arithmetic errors as determined by the application of ITT Sub-Clause 55.2 shall be considered as non-responsive.

56. Conversion to Single Currency

56.1 For evaluation and comparison purpose, TEC shall convert all Tender prices expressed in the amounts in various currencies into an amount in Bangladeshi Taka currency, using the **selling exchange rates** established by the Bangladesh Bank, on the date of **Tender opening**.

57. Financial Evaluation

57.1 Thirdly the TEC, pursuant to Rule 98 of the Public Procurement Rules, 2008 shall evaluate each Tender that has been determined, up to this stage of the evaluation, to be responsive to the mandatory requirements in the Tender Document..

57.2 To evaluate a Tender in this stage , the Purchaser shall consider the following

(a) Verification and examination of the Price Schedule for Plant and Services (Form PG5-3) as furnished by the Tenderer and checking the compliance with the instructions provided under ITT Clause 26;

(b) Evaluation will be done for Items or lot by lot as stated under ITT Clause 26 and the Total Tender Price as quoted in accordance with Clause 26;

(c) Adjustment for correction of arithmetical errors as stated under ITT Sub-Clause 55.2;

(d) Adjustment for price modification offered as stated under ITT Clause 41;

(e) Adjustment due to discount as stated under ITT Sub-Clauses 26.11 and 57.3;

(f) Adjustment due to the application of economic factors of evaluation as stated under ITT Sub-

Clause 57.5 if any;

(g) Adjustment due to the assessment of the price of unpriced items as stated under ITT Clause 58 if any;

57.3 If Tenders are invited for a single lot or for a number of lots as stated under ITT Sub-clauses 26.10, TEC shall evaluate only lots that have included at least the percentage of items per lot. The TEC shall evaluate and compare the Tenders taking into account:

(a) Lowest evaluated tender for each lot ;

(b) The price discount/reduction per lot;

(c) Least cost combination for the Purchaser, considering discounts and the methodology for its application as stated under ITT Sub-clauses 26.10 and 26.11 offered by the Tenderer in its Tender.

57.4 Only those spare parts and tools which are specified as a item in the List of Goods and Related Services in Section 6, Employer's Requirement or adjustment as stated under ITT Sub-clause 54.5, shall be taken into account in the Tender evaluation. Supplier-recommended spare parts for a specified operating requirement as stated under ITT Sub-clause 28.2(b) shall not be considered in Tender evaluation.

57.5 The Purchaser's evaluation of a tender may require the consideration of other factors, in addition to the Tender Price quoted as stated under ITT Clause 26. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of tenders. The factors, methodologies and criteria to be used shall be as specified in **TDS**. The applicable economic factors, for the purposes of evaluation of Tenders shall be:

(a) Adjustment for Deviations in the Delivery and Completion Schedule.

(b) Cost of major replacement components, mandatory spare parts, and service.

57.6 Variations, deviations, and alternatives and other factors which are in excess of the requirements of the Tender Document or otherwise result in unsolicited benefits for the Purchaser will not be taken into account in Tender evaluation.

58. Price Comparison

58.1 The TEC shall compare all responsive Tenders to determine the lowest-evaluated Tender, as stated in ITT 57.2.

58.2 In the extremely unlikely event that there is a tie for the lowest evaluated price, the Tenderer with the superior past performance with the Purchaser shall be selected, whereby factors such as delivery period, quality of Goods delivered, complaints history and performance indicators could be

taken into consideration.

58.3 In the event that there is a tie for the lowest price and none of the Tenderers has the record of past performance with the Purchaser, then the Tenderer shall be selected, subject to firm confirmation through the Post-qualification process described in ITT Clause 61, after consideration as to whether the quality of Goods that is considered more advantageous by the end-users.

58.4 The successful Tenderer as stated under ITT Sub Clauses 58.1, 60.2 and 60.3 shall not be selected through lottery under any circumstances.

59. Post-qualification

59.1 After determining the lowest-evaluated responsive tender as sated under ITT Sub-Clause 58.1, the Purchaser's TEC pursuant to Rule 100 of the Public Procurement Rules, 2008, shall carry out the Post-Qualification of the Tenderer, using only the requirements specified in Sub-Section C, Qualification Criteria.

59.2 The TEC shall contact the references given by Tenderers about their previous Supply experiences to verify, if necessary, statements made by them in their Tender and to obtain the most up-to-date information concerning the Tenderers.

59.3 The TEC may visit the premises of the Tenderer as a part of the post-qualification process, if practical and appropriate, to verify information contained in its Tender.

59.4 The TEC shall determine to its satisfaction whether the Tenderer that is selected as having submitted the lowest evaluated responsive Tender is qualified to perform the Contract satisfactorily.

59.5 The objective of any visit under ITT Sub-Clause 59.3 shall be limited to a general and visual inspection of the Tenderer's facilities and its plant and equipment, and there shall be no discussion concerning the Tender or its evaluation with the Tenderer during such visit(s).

59.6 In the event that the Tenderer with lowest evaluated cost fails the post-qualification, the TEC shall make a similar determination for the Tenderer offering the next lowest evaluated cost and so on from the remaining responsive Tenders, provided that,

(a) such action shall only be taken if the evaluated costs of the Tenders under consideration are acceptable to the Purchaser;

(b) when the point is reached whereby the evaluated costs of the remaining responsive Tenders are significantly higher than that of the official estimate, or the market price, the Purchaser may take action pursuant to Rule 33 of the PPR 2008 and may proceed for re-Tendering, using a revised Tender

Document designed to achieve a more successful result.

60. Negotiation

60.1 No negotiations shall be held during the financial offer evaluation or award, with the lowest or any other Tenderer.

60.2 The Procuring Entity through the TEC may, however, negotiate with the lowest evaluated Tenderer with the objective to reduce the Contract Price by reducing the scope of works or a reallocation of risks and responsibilities, only when it is found that the lowest evaluated Tender is significantly higher than the official estimated cost; the reasons for such higher price being duly investigated.

60.3 If the Procuring Entity decides to negotiate for reducing the scope of the requirements under ITT Sub Clause 60.2, it will be required to guarantee that the lowest Tenderer remains the lowest Tenderer even after the scope of work has been revised and shall further be ensured that the objective of the Procurement will not be seriously affected through this reduction.

60.4 In the event that the Procuring Entity decides because of a high Tender priceto reduce the scope of the requirements to meet the available budget, the Tenderer is not obliged to accept the award and shall not be penalised in any way for un-accepting the proposed award.

61. Rejection of All Tenders

61.1 The Purchaser may, in the circumstances as stated under ITT Sub-Clause 61.2 and pursuant to Rule 33 of the Public Procurement Rules 2008, reject all Tenders following recommendations from the Tender Evaluation Committee only after the approval of such recommendations by the Head of the Purchaser.rejected, if –

61.2 All Tenders can be rejected, if -

(a) the price of the lowest evaluated Tender exceeds the official estimate, provided the estimate is realistic; or

(b) there is evidence of lack of effective competition; such as non-participation by a number of potential Tenderers; or

(c) the Tenderers are unable to propose completion of the delivery within the stipulated time in its offer, though the stipulated time is reasonable and realistic; or

(d) all Tenders are non-responsive; or

(e) evidence of professional misconduct, affecting seriously the Procurement process, is established pursuant to Rule 127 of the Public Procurement Rules, 2008.

61.3 Notwithstanding anything contained in ITT Sub-Clause 61.2 Tenders may not be rejected if the lowest evaluated price is in conformity with the market price.

61.4 A Purchaser may pursuant to Rule 35 of the Public

Procurement Rules, 2008, on justifiable grounds, annul the Procurement proceedings prior to the deadline for the submission of Tenders.

61.5 All Tenders received by the Purchaser shall be returned unopened to the Tenderers in the event Procurement proceedings are annulled under ITT Sub-Clause 61.4.

62. Informing Reasons for Rejection

62.1 Notice of the rejection, pursuant to Rule 35 of the Public Procurement Rules, 2008, will be given promptly within **seven (7) days** of decision taken by the Purchaser to all Tenderers and, the Purchaser will, upon receipt of a written request, communicate to any Tenderer the reason(s) for its rejection but is not required to justify those reason(s).

G. Contract Award

63. Award Criteria

63.1 The Purchaser shall award the Contract to the Tenderer whose offer is responsive to the Tender Document and that has been determined to be the lowest evaluated Tender, provided further that the Tenderer is determined to be Post-Qualified as stated under ITT Clause 59.

63.2 A Tenderer shall not be required, as a condition for award of contract, to undertake obligations not stipulated in the Tender Document, to change its price, or otherwise to modify its Tender.

64. Notification of Award

64.1 Prior to the expiry of the Tender validity period and within **seven (7)** working days of receipt of the approval of the award by the Approving Authority, the Purchaser pursuant to Rule 102 of the Public procurement Rules, 2008, shall issue the Notification of Award (NOA) to the successful Tenderer.

64.2 The Notification of Award, attaching the contract as per the sample (**Form PG5A-7)** to be signed, shall state:

(a) the acceptance of the Tender by the Purchaser;

(b) the price at which the contract is awarded;

(c) the amount of the Performance Security and its format;

(d) the date and time within which the Performance Security shall be submitted; and

(e) the date and time within which the contract shall be signed.

64.3 The Notification of Award shall be accepted in writing by the successful Tenderer within **seven (7)** working days from the date of issuance of **NOA.**

64.4 Until a formal contract is signed, the Notification of Award shall constitute a Contract, which shall become binding upon the furnishing of a Performance Security and the signing of the Contract by both parties.

64.5 The Notification of Award establishes a Contract between the Purchaser and the successful Tenderer and the existence of a Contract is confirmed through the signature of the Contract Document that includes all agreements between the Purchaser and the successful Tenderer.

65. Performance Security

65.1 The Performance Security shall be determined sufficient to protect the performance of the Contract pursuant to Rule 27 of the Public Procurement Rules, 2008.

65.2 Performance Security shall be furnished by the successful Tenderer in the amount specified in the **TDS** and **denominated in the currencies** in which the Contract Price is payable pursuant to Rule 102 (8) of the Public Procurement Rules, 2008.

65.3 The proceeds of the Performance Security shall be payable to the Purchaser unconditionally upon first written demand as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

66. Form and Time Limit for furnishing of Performance security

66.1 The Performance Security shall be in the form of irrevocable Bank Guarantee in the format (Form PG5A-9) as stated under ITT Clause 65, shall be issued by an internationally reputable bank and it shall have correspondent bank located in Bangladesh, to make it enforceable pursuant to Rule 27(4) of the Public Procurement Rules, 2008..

66.2 Within twenty-eight (28) days from issue of the Notification of Award, the successful Tenderer shall furnish the Performance Security for the due performance of the Contract in the amount specified under ITT Sub Clause 65.2.

67. Validity of Performance Security

67.1 The Performance Security shall be required to be valid until a date twenty-eight (28) days beyond the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations.

67.2 If under any circumstances date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations is to be extended, the Performance Security shall correspondingly be extended for the extended period.

68. Authenticity of performance Security

69.1 The Purchaser shall verify the authenticity of the Performance Security submitted by the successful Tenderer by sending a written request to the branch of the bank issuing irrevocable Bank Guarantee in specified format.

69.2 If the Performance Security submitted under ITT Sub Clause 65.2 is not found to be authentic, the Purchaser shall proceed to take measures against the Tenderer in

accordance with Section 64 of the Act and pursuant to Rule 127 of the Public Procurement Rules, 2008.

69. Contract Signing

69.1 At the same time as the Purchaser issues the Notification of Award, the Purchaser shall send the draft Contract Agreement and all documents forming the Contract pursuant to Rule 102 of the Public Procurement Rule, 2008, to the successful Tenderer.

69.2 Within twenty-eight (28) days of the issuance of Notification of Award, the successful Tenderer and the Purchaser shall sign the contract provided that the Performance Security submitted by the Tenderer is found to be genuine.

69.3 If the successful Tenderer fails to provide the required Performance Security, as stated under ITT Clause 65 or to sign the Contract , as stated under ITT Sub-Clause 69.2, Purchaser shall proceed to award the Contract to the next lowest evaluated Tenderer, and so on, by order of ranking pursuant to Rule 102 of the Public Procurement Rules,2008.

70. Publication of Notification of Award of Contract

70.1 Notification of Awards for Contracts of Taka 10 (ten) million and above shall be notified by the Purchaser to the Central Procurement Technical Unit within 7(seven) days of issuance of the NOA for publication in their website, and that notice shall be kept posted for not less than a month pursuant to Rule 37 of the Public Procurement Rules, 2008.

70.2 Notification of Award for Contracts below Taka 10(ten) million, shall be published by the Purchaser on its Notice Board and where applicable on the website of the Purchaser and that notice shall be kept posted for not less than a month pursuant to Rule 37 of the Public Procurement Rules, 2008..

71. Debriefing of Tenderers

72.1 Debriefing of Tenderers by Purchaser shall outline the relative status and weakness only of his or her Tender requesting to be informed of the grounds for not accepting the Tender submitted by him or her pursuant to Rule 37 of the Public Procurement Rule, 2008, without disclosing information about any other Tenderer.

72.2 In the case of debriefing confidentiality of the evaluation process shall be maintained.

72. Right to Complains

72.1 Any Tenderer has the right to complain if it has suffered or likely to suffer loss or damage due to a failure of a duty imposed on the Purchaser to fulfil its obligations in accordance with Section 29 of the Public Procurement Act 2006 and pursuant to Part 12 of Chapter Three of the Public Procurement Rules, 2008.

72.2 Circumstances in which a formal complaint may be lodged in sequence by a potential Tenderer against a Purchaser pursuant to Rule 56 of the Public Procurement Rules, 2008, and the complaints, if any, be also processed pursuant to Rule 57 of the Public Procurement Rules 2008.

72.3 The potential Tenderer shall submit his or her complaint in writing within seven (7) calendar days of becoming aware of the circumstances giving rise to the complaint.

72.4 In the first instance, the potential Tenderer shall submit his or her complaint to the Purchaser who issued the Tender Document.

72.5 The place and address for the first stage in the submission of complaints to the Administrative Authority is provided in the **TDS**.

72.6 The Tenderer may appeal to a Review Panel only if the Tenderer has exhausted all his or her options of complaints to the administrative authority as stated under ITT Sub-Clause 72.2.

Section 2. Tender Data Sheet

Instructions for completing the Tender Data Sheet are provided, as needed, in the notes in italics and under lined mentioned for the relevant ITT clauses.	
ITT Clause	**Amendments of, and Supplements to, Clauses in the Instruction to Tenderers**
A. General	
ITT 1.1	The Procuring Entity/Employer/Purchaser is: **Northern Electricity Supply Company Limited** **Representative:** **Superintending Engineer (Procurement),** **NESCO Ltd., Bidyut Bhaban, Hetem khan,** **Rajshahi, Bangladesh.** **Telephone: +88-0721-774900.** **e-mail: se.procurement@nesco.gov.bd** **The Name and identification number of Tender is**: **Design, Supply, Erection, Installation, Testing and Commissioning of 04 (Four) 33/11 kV Substations at BSCIC Industrial Park, Sirajganj on Turnkey Basis.** **Invitation Ref No: 27.29.0000.012.07.001.22-106; Date: 13/02/2022**
ITT 1.2	The number, identification and name of lots comprising the Tender are: Single Lot on Trunkey Basis.
ITT3.1	The source of public funds is Own Fund of NESCO
ITT3.3	The name of the Development Partner is **None**
ITT5.1	Tenderers from the following countries are not eligible: Israel
ITT 5.13	Tenderers shall have the following up to date valid License **ABC Category Electrical Supervisory License from Bangladesh Electrical Licensing Board &** Trade/Business License.
ITT6.1	Materials, Equipment and associated services from the following countries are not eligible: Israel Goods from a country which is not included in the specified countries mentioned in the respected GTP in Section 8: Guaranteed Technical Particulars is also not acceptable.

ITT 7.5 **(New Clause)**	Added immediate after Clause No. 7.4 Each Tenderer before submitting his Tender will carefully examine the tender requirements and visit the site(s) to determine the existing conditions, facilities and limitations. Tenderer shall have made all necessary arrangement to carry out the Contract if awarded for the Supply & Installation of Plant & Equipment to completing the Scope of Work as described in Section 6: Employer's Requirement. Any neglect to delay or failure on the part of the tenderer to obtain reliable information upon the foregoing or any matter effecting the work and completion period shall not relieve the successful tenderer of his responsibilities, risks or liabilities until final acceptance of the Supply & Installation of Plant & Equipment in case of award of the contract.
B. Tender Document	
ITT8.2	The following are the offices of the Purchaser or authorised agents for the purpose of providing the Tender Document: **Superintending Engineer (Procurement),** **NESCO Ltd., Bidyut Bhaban, 3rd Floor, Hetem khan,** **Rajshahi, Bangladesh.** **Telephone: +88-0721-774900.** **e-mail: se.procurement@nesco.gov.bd**
ITT9.1	For **clarification of Tender Document purposes** only, the Procuring Entity's address is: **Attention: Superintending Engineer (Procurement),** **NESCO Ltd., Bidyut Bhaban, 3rd Floor, Hetem khan,** **Rajshahi, Bangladesh.** **Telephone: +88-0721-774900.** **e-mail: se.procurement@nesco.gov.bd**
ITT10.1	**A Pre-Tender meeting shall not be held**
C. Qualification Criteria	
ITT 13.1	The maximum Three (3) number of arbitrations against the Tenderer over a period of last five (5) Years.
ITT14.1 (a)	The Tenderer shall have a minimum of **Five (05) years** of overall experience in the role of contractor, subcontractor, or management contractor.
ITT 14.1(b)	The minimum specific experience as a Contractor or Management Contractor in similar to the proposed plant and services in at least a number of **2 (two)** contract(s) of similar nature*, complexity and methods/construction technology successfully completed within the last **10 (ten)** years (years counting backward from the date of IFT), each with a value of at least **USD 1,743,000.00 or BDT 15.00 (Fifteen) Crore** in govt./semi govt./autonomous electricity utilities in Bangladesh. *Note:* *1. The Tenderer shall have to submit End User Certificate(s) in End User's official*

<table>
<tr><td></td><td>pad; in favor of above-mentioned experience stating that the performance of the supplied plant and services are satisfactory for at least one (01) year.
2. The End User Certificate(s) duly signed by the end user shall mention the name & commissioning date of the plant and services which were designed, supplied, installed/constructed, tested and commissioned by Tenderer (lead partner in case of JV) and shall contain end-user's full mailing address, e-mail address, website address, fax number and phone number for the convenience of authentication. In any case, NESCO reserve the right to verify genuineness of End User Certificate(s).
3. Certificate(s) those are not in Bangla/English must be notarized on translated English version.
*Similar nature means: Constriction of 33/11kV or higher voltage level GIS/AIS/GIS+AIS Substation and having capacity regarding engineering, supply, erection, installation, testing and commissioning of at least 1x10/13.33MVA or higher capacity substations on turnkey basis.</td></tr>
<tr><td>ITT 15.1(a)</td><td>The required average annual turnover shall be greater than [insert amount] within the last [state number] years. Not Applicable</td></tr>
<tr><td>ITT 15.1(b)</td><td>The minimum amount of liquid assets or working capital or credit facilities of the Tenderer shall be USD 2,905,000.00 or BDT 25.00 (Twenty-Five) Crore.
Must be Supported by Credit Line (without any alternation/edit of Form PG5A-6a) from any Scheduled Bank of Bangladesh; Otherwise, the tender shall be non-responsive.
Note: Financial Audit Report shall not be considered for this criterion.</td></tr>
<tr><td>ITT 16.1(a)</td><td>A Project Manager, Engineer, and other key staff shall have the following qualifications and experience:

<table>
<tr><th>No</th><th>Position</th><th>Total Works Experience (Years)</th><th>Experience in similar works (Years)</th></tr>
<tr><td>01</td><td>Project Manager</td><td>15</td><td>05</td></tr>
<tr><td>02</td><td>Design Engineer</td><td>10</td><td>07</td></tr>
<tr><td>03</td><td>Electrical Engineer</td><td>10</td><td>05</td></tr>
<tr><td>04</td><td>AIS Expert*</td><td>10</td><td>05</td></tr>
<tr><td>05</td><td>Power Transformer Expert*</td><td>10</td><td>05</td></tr>
<tr><td>06</td><td>Protection/Control Engineer</td><td>10</td><td>05</td></tr>
<tr><td>07</td><td>Civil Engineer</td><td>10</td><td>05</td></tr>
<tr><td>08</td><td>Foreman</td><td>05</td><td>03</td></tr>
<tr><td>09</td><td>Technician (Auto CAD)</td><td>05</td><td>02</td></tr>
<tr><td>10</td><td>Technician (Electrical)</td><td>05</td><td>02</td></tr>
</table>

The tenderer shall provide detailed CV of proposed personnel in Tenderer's letterhead pad. The CVs must be endorsed by the tenderer.

The installation, testing and commissioning of AIS and Power Transformer shall be</td></tr>
</table>

	performed by experts of relevant manufacturer. In this regard, the Tenderer shall provide CV of the experts of the relevant manufacturers in addition to the CV of Tenderer's employees.
ITT 17.1	The Tenderer shall own or have proven access to hire or lease of the major equipment, in full working order as follows :

No	**Equipment Type and Characteristics**	**Minimum Number Required**
1	Crane 10 tons	01 set
2	Transportation Vehicles	As required
3	Relay test set	03 set
4	Primary Current Injector	03 set
5	Secondary Current Injector	03 set
6	Earth tester	03 set
7	Insulation testers (5 kV)	03 set
8	Live-Line Voltage & Current Measuring Tools	03 set
9	Others	As required

ITT 18.1	The value of non-judicial stamp for execution of the Joint Venture Agreement shall be Tk 300 only.
ITT 18.2	Maximum number of partners in the JV shall be “not limited”

The **minimum qualification** requirements of Leading Partner, other Partner(s) and requirements by summation of a JV shall be as follows:

TDS Clauses References	**Requirements by summation**	**Requirements for Leading Partner**	**Requirements for other Partner(s)**
ITT-14.1(a)	Summation not applicable	Same as stated in TDS	Same as for Leading Partner
ITT-14.1(b)	100%	At least two Contract	Minimum requirement not applicable
ITT-15.1(a)	100%	40%	25%
ITT-15.1(b)	100%	40%	25%
ITT-16.1(a)	100%	Minimum requirement not applicable	Minimum requirement not applicable
ITT-17.1	100%	Minimum requirement not applicable	Minimum requirement not applicable

D. Tender Preparation	
ITT 19.2	The maximum of percentage 20% of the Contract Value allowed to be subcontracted.
ITT 19.4	The Nominated Subcontractor(s) named [*insert name(s)*] shall execute the following specific components of the proposed Works: **Not Applicable**
ITT 20.1	Tenders are being invited for single lot.
ITT 24.2(r)	The Tenderer shall submit with its technical offer the following additional documents: 1. Tenderer shall have to submit the information of all completed turnkey contracts in govt. entities under power sector of Bangladesh within last 10 (ten) years; years counting backward from the date of publication of IFT in the newspaper, with supporting document (end user's satisfactory performance certificate/PAC/FAC/ Completion Certificate) in the format attached as **Annexure: 5-1.** 2. Tenderer shall have to submit the information of all ongoing turnkey contract(s) in govt. entities under power sector of Bangladesh in the format attached as **Annexure: 5-2** with supporting document (Acceptance of NOA/Contact agreement) along with the up-to-date progress cum work quality certificate from end user. 3. Sealed & signed original Tender Document (which was issued by NESCO) by a person duly authorized to sign on behalf of the tender. Copy of issued tender document will not be acceptable. 4. Registration /Certificate of Incorporation /Trade licence in its country of origin / relevant documents as documentary evidence to satisfy experience criteria as stated in ITT 14.1(a). 5. End User certificate as documentary evidence to satisfy experience criteria as stated in ITT 14.1(b). 6. Audited Financial Reports or Cash flow statements. 7. Personal Information form shall be endorsed by the Tenderer on his official pad as documentary evidence to satisfy the criteria as stated in ITT 16.1(a). 8. Equipment Information form shall be endorsed by Tenderer on his official pad as documentary evidence to satisfy the criteria as stated in ITT 16.1(b). 9. Warranty Certificate (Form PG5A-12) from Tenderer as per GCC 42. 10. Bill of Quantity (BOQ) as per Section 6. Employer's Requirements 11. Guaranteed Technical Particulars (GTP) in Section 8 shall be properly filled up in manufacturer's official pad with submission of related supporting documents & signed by the Manufacturer & Tenderer. 12. At least 02 (two) nos. Manufacturer's Satisfactory Performance Certificates from Electricity Utility as End User depicting that each offered type or higher capacity rating Power Transformer, 33kV Outdoor VCB, 33kV PCM Panel, 11kV VCB with PCM Panel, Battery & Battery Charger, 11kV XLPE Power Cable, 33kV & 11kV LA, CT & PT of same voltage class within last 10 (ten) years i.e. years

counting backward from the date of publication of IFT in the newspaper and has been in satisfactorily service for at least 02(two) years. The Satisfactory Performance Certificate (SPC) shall be in End User's official pad and shall contain end-user's full mailing address, e-mail address, website address and fax / telephone number for the convenience of authentication.

Note: Electricity Utility means an organization/company that engages in electricity generation/transmission/distribution of electricity for sale in a regulated market.

For 33KV VCB with PCM & 11KV Switchgear Panel:

13. Manufacturer's authorization for Protective Relays from ABB (Switzerland/ Sweden/Finland) or Siemens (Germany) or Schneider Electric (UK/France) or ALSTOM (UK/France), SEL, USA & Energy Meters from Siemens (Germany/Switzerland) or AEG (Germany) or ABB (Switzerland/Finland) or Itron (USA) or Elster (USA/Romania) or Landis+ Gyr (Switzerland/Greece) or Toshiba (Japan) or Honeywell (USA) or CEWE (UK) in prescribed Form (PG5A-5).

14. Type Test Certificates & Reports:

For 33KV Switchgear (Outdoor VCB with PCM):

Type Test Certificates & Reports for offered type similar or higher Ampere rating Outdoor Vacuum Circuit Breaker for same voltage class from any short-circuit testing liaison (STL) Member [http://www.stl-liaison.org/web/03_Members.php] Testing Organization or Laboratory as per relevant IEC standard. The type test report along with results shall include at least the following tests:

a) Lightning Impulse Voltage withstand tests
b) Power Frequency withstand tests
c) Temperature Rise tests
d) Measurement of Resistance of the main circuit.
e) Short-time withstand current and peak withstand current tests.
f) Mechanical Endurance tests
g) Short Circuit performance tests
h) Out-of-phase making & breaking tests
i) IP55 tests.

For 11KV Switchgear (VCB with PCM Panel):

Type Test Certificates & Reports for offered type similar or higher Ampere rating Switchgear for same voltage class from any short-circuit testing liaison (STL) Member [http://www.stl-liaison.org/web/03_Members.php] Testing Organization or Laboratory as per relevant IEC standard. The type test report along with results shall include at least the following tests:

a) Lightning Impulse Voltage Withstand tests.
b) Power frequency withstands tests.
c) Temperature Rise Tests.
d) Measurement of resistance of the main circuit.
e) Short-circuit performance tests (including short-time and peak withstand current tests, verification of making & breaking capacities tests).

f) Mechanical operation tests.
g) Internal Arc Classification IAC A FLR

15. IEC 61850 Test Certificate for all Protective Relays.

For Power Transformers:

16. Manufacturer's authorization for (On Load tap Changer) OLTC from MR, Germany/ ABB, Sweden in prescribed Form (PG5A-5).

17. Cross-sectional Drawing showing the arrangement of core and windings of the offered type Transformer.

18. Type Test Certificates, Reports & Special Tests for offered type similar or higher MVA rating power transformer for same voltage class from any short-circuit testing liaison (STL) Member [http://www.stl-liaison.org/web/03_Members.php] Testing Organization or Laboratory as per relevant IEC standard. The type test report shall include at least the following tests along with results:

a) Temperature Rise Test
b) Lightning Impulse Test
c) Short circuit withstands test report of HV-LV

19. Tenderer shall submit the characteristic curve (flux vs Loss/Kg) of core materials.

For 33kV & 11kV Outdoor type CT & PT

20. Type Test Certificates & Reports for offered type similar of higher ampere rating CT & PT from any independent testing laboratory as per relevant IEC standard.

For 110V DC Substation Battery & 110V DC Battery Charger

21. Type Test Certificates & Reports for offered type similar of higher ampere rating Substation Battery & 110V DC Battery Charger from any independent testing laboratory as per relevant IEC standard.

For 33KV & 11kV Surge Arrester (LA):

22. Type Test Certificates & Reports for offered type similar or higher Ampere rating Surge Arrester (LA) for same voltage class from any short-circuit testing liaison (STL) Member [http://www.stl-liaison.org/web /03_Members.php] Testing Organization or Laboratory as per relevant IEC standard. The type test report along with results shall include at least the following tests:

a) Insulation Withstand tests on the Arrester housing;
b) Step Current Impulse Residual Voltage test;
c) Lightning Impulse Residual Voltage test;
d) Long Duration Current Impulse withstand test;
e) High Current Impulse operating duty test;
f) Power Frequency voltage versus time curve;
g) Partial Discharge test.

For XLPE Power Cable:

23. Type Test Certificates & Reports for XLPE insulated Copper cable of similar or higher size of similar or higher voltage class from any short-circuit testing liaison (STL) Member [http://www.stl-liaison.org/web/03_Members.php] Testing Organization or Laboratory or China National Center for quality Supervision and

	test of electrical wire and cable as per relevant IEC standard. 24. Short circuit earth fault current with details Calculation for metal sheath. 25. Detail cross sectional drawing of the offered type cable showing dimension & identification name. *Note: If required, Purchaser will authenticate Type Test/Calibration Certificates & Reports from the Certificates & Reports issuing laboratory and if any applicable charge /cost impose by issuing laboratory for said authentication shall be borne by Tenderer. The certificates and Reports shall contain laboratory's full mailing address, e-mail address, website address and fax/telephone number for the convenience of authentication. If this information is not mentioned in the Certificates & Reports, all this information should be mentioned in the Letterhead pad of the manufacturer duly seal & signed by the manufacturer reprise Others:* 26. The Tenderer shall mention maximum days required to complete the supply of equipment/ materials (at site) and maximum days required for the completion of actual design, erection, installation, testing, commissioning & Civil work in bar chart form within the completion time. 27. All Tender Forms as thereof. 28. Site visit Report. 29. Drawings (SLD, Layout Drawing etc.)
24.3(c)	The Tenderer shall submit with its financial offer the following additional documents: **None**
ITT 25.1	**Alternatives shall not be permitted.** **Manufacturer name, equipment model and GTP for any item shall be specific. The tenderer shall offer single manufacturer name, equipment model and GTP for each item. The tenderer offering alternative manufacturer name/equipment model/GTP for one item shall be non-responsive.**
ITT 26.1	Tenderers shall quote for the entire Plant, Line, and Installation Services on a single responsibility basis
26.5(a)	Place of Destination*:* Substation site (BSCIC Sirajganj) or Store of NESCO.
26.5(d)	Local transportation to named place of final destination is: Substation site (BSCIC Sirajganj) or Store of NESCO.
ITT 26.7	The prices quoted by the Tenderer shall be fixed for the duration of the Contract.
ITT 27.4	Name of the foreign currency: **USD, GBP, Euro & JPY**
ITT 28.1 (b)	Spare parts are: Required as per Scope of work & BOQ. Period of time the Equipment are expected to be functioning (for the purpose of spare parts): 20 (Twenty) years from issuing date of FAC. *[Note: Such spare parts as the Purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; Such spare parts that the Purchaser may be able to purchase from other supplier/manufacturers but are compatible with the goods procured]*

ITT 28.1(b)	Manufacturer's authorization is: required A Manufacturer's Authorisation Letter is required for all the items listed in Guaranteed Technical Particulars (GTP), Section 6 and as per ITT24.2(r). *Note: Authorization letter from Manufacturer's Sales office (if located outside the manufacturing country) and Dealer/Trading house will not be accepted if not supported by Manufacturer's letter. The Authorization letter shall mention e-mail address, telephone/fax and designation with detail address of the manufacturer representative duly signed in the manufacturer's official pad.*
ITT 30.2	The Tender validity period shall be 180 days.
ITT 32.2	The amount of the Tender Security shall be **as per Tender Notice** in favour of Superintending Engineer, Procurement, NESCO.
ITT 37.1	In addition to the original of the Tender, 2 (two) copies shall be submitted within the date and time mentioned in the Tender Notice.
E. Submission of Tender	
ITT 38.2(e)	The inner and outer envelopes shall bear the following additional identification marks: 1. Date of Submission 2. Seal & Signature of the Tenderer Book Binding and Page Number is required for original and copies. Any Technical **offer associated with Financial offer in the same envelopes will be rejected.**
ITT 38.4(e)	The inner and outer envelopes shall bear the following additional identification marks: 1. Date of Submission. 2. Seal & Signature of the Tenderer.
ITT 39.1	For Tender submission purposes, the Purchaser's address is: Superintending Engineer (Procurement), NESCO Ltd., Bidyut Bhaban, Hetem khan, Rajshahi, Bangladesh. Telephone: +88-0721-774900. e-mail: se.procurement@nesco.gov.bd The deadline for submission of Tenders is: as specified in tender notice or amendment of submission time (if any). Electronic Tender submission is not permitted.
ITT 39.3	For Tender submission purposes only, the Procuring Entity's address is: Superintending Engineer (Procurement), NESCO Ltd., Bidyut Bhaban, Hetem khan, Rajshahi, Bangladesh. Telephone: +88-0721-774900 e-mail: se.procurement@nesco.gov.bd Electronic Tender submission is not permitted. Address (SECONDARY PLACES): Not Applicable.

	The deadline for submission of Tenders is: as specified in tender notice or amendment of submission time (if any).
ITT 39.4	The deadline for hand-delivering of the Tenders at the **PRIMARY PLACE** is: as specified in tender notice or amendment of submission time (if any).
F. Opening and Evaluation of Tenders	
ITT 45.1	The technical offer opening shall take place at: Superintending Engineer (Procurement), NESCO Ltd., Bidyut Bhaban, Hetem khan, Rajshahi, Bangladesh. Telephone: +88-0721-774900. e-mail: se.procurement@nesco.gov.bd Time & Date: as specified in Tender notice or amendment of submission time (if any).
ITT 57.5	The applicable economic factors, for the purposes of evaluation of Tenders shall be: (a) Adjustment for Deviations in the Delivery and Completion Schedule: Not Applicable for this Tender. (b) Cost of major replacement components, mandatory spare parts, and service: Not Applicable for this Tender. (c) Other factors affecting the true economic value: Not Applicable for this Tender.
ITT 57.7 **New Clause**	If the lowest Evaluated Tender is significantly below the official estimated cost or unbalanced as a result of front loading in the opinion of the TEC, the TEC may require the Tenderer to produce detailed breakdown of unit price or rates for any or all items of the Price Schedule, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the breakdown of the unit price or rates, taking into consideration the schedule of estimated Contract payments, the Purchaser may require that the amount of the Performance Security set forth in ITT Sub Clause 65.2 be increased at the expenses of the Tenderer to a level as stated in TDS under ITT Sub Clause 65.4 sufficient to protect the Employer against financial loss in the event of default by such Tenderer during Contract implementation, if awarded the Contract.
G. Award of Contract	
ITT 65.2	The amount of Performance Security shall be minimum 10% (Ten percent) of the Contract Price.
ITT65.4 **(New Clause)**	The Employer may increase the amount of the Performance Security above the amounts as stated under ITT Sub Clause 65.2 but not exceeding twenty-five (25) percent of the Contract price, if it is found that the Tender is significantly below the official estimated cost or unbalanced as a result of front loading as stated under ITT Sub Clause 57.7
ITT 72.5	The name and address of the office where complaints to the Purchaser are to be submitted is: Superintending Engineer (Procurement), NESCO Ltd., Bidyut Bhaban, Hetem khan, Rajshahi, Bangladesh. Telephone: +88-0721-774900. e-mail: se.procurement@nesco.gov.bd

Section 3. General Conditions of Contract

A. General

1. Definitions

1.1 In the Conditions of Contract, which include Particular Conditions and these General Conditions, the following words and expressions shall have the meaning hereby assigned to them. Boldface type is used to identify the defined terms:

(a) **Approving Authority** means the authority which, in accordance with the Delegation of Financial powers, approves the award of Contract for the Procurement of Goods, Works and Services.

(b) **Act means** The Public Procurement Act, 2006 (Act 24 of 2006).

(c) **Commissioning** means operation of the Facilities or any part thereof by the Contractor following Completion, which operation is to be carried out by the Contractor for the purpose of carrying out Guarantee Test(s).

(d) **Competent Authority** means the authority that gives decision on specific issues as per delegation of administrative and/or financial powers.

(e) **Completion** means that the Facilities (or a specific part thereof where specific parts are specified in the Contract) have been completed operationally and structurally and put in a tight and clean condition, that all work in respect of Pre Commissioning of the Facilities or such specific part thereof has been completed, and that the Facilities or specific part thereof are ready for Commissioning.

(f) **Completion Certificate** means the Certificate issued by the Project Manager as evidence that the Contractor has executed the services in all respects as per design, drawing, specifications and Conditions of Contract.

(g) **Completion Date** is the actual date of completion of the plant and services certified by the Project Manager, in accordance with GCC Clause 24.

(h) **Contract Agreement** means the Agreement entered into between the Procuring Entity and the Contractor, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein to supply and install Plant & Equipment

(i) **Contract Documents** means the documents listed in GCC Clause 6, including any amendments thereto.

(j) **Contractor/supplier** means the Person under contract with the Procuring Entity for the supply and installation of Plant & Equipment under the Rules and the Act as stated in the **PCC**.

(k) **Contractor's Representative** means any person nominated by the Contractor and approved by the Employer to perform

the duties delegated by the Contractor.

(l) **Contract Price** means the price payable to the Contractor as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, for the supply and installation of plant & equipment in accordance with the provisions of the Contract, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.

(m) **Cost** means all expenditures reasonably incurred or to be incurred by the Contractor, whether on or off the Site, including overhead ,profit, taxes, duties, fees, and such other similar levies

(n) **Day** means calendar day unless otherwise specified as working days.

(o) **Dayworks** means work carried out following the instructions of the Procuring Entity or the authorised Project Manager and is paid for on the basis of time spent by the Contractor's workers and equipment at the rates specified in the Schedules, in addition to payments for associated Materials and Plant.

(p) **Defect** is any part of the Works not completed in accordance with the Contract.

(q) **Defect Liability Period** means the period of validity of the warranties given by the Contractor commencing at Completion of the Facilities or a part thereof, during which the Contractor is responsible for defects with respect to the Facilities (or the relevant part thereof) as provided in contract document.

(r) **Defects Correction Certificate** is the certificate issued by the Project Manager upon correction of defects by the Contractor.

(s) **Drawings** include calculations and other information provided in Section 7 or as approved by the Project Manager for the execution and completion of the Contract.

(t) **Effective Date** means the date of fulfillment of all conditions of the Contract Agreement, from which the Time for Completion shall be counted.

(u) **Equipment**means all facilities, equipment, machinery, tools, apparatus, appliances or things of every kind required in or for installation, completion and maintenance of Facilities that are to be provided by the Contractor, but does not include Plant, or other things intended to form or forming part of the Facilities.

(v) **Facilities** means the Plant to be supplied and installed, as well as all the Installation Services to be carried out by the Contractor under the Contract. It also includes any ancillary building or infra structure that needs to be constructed/built/erected to support the plant.

(w) **Force Majeure** means an event or situation beyond the control of the Contractor that is not foreseeable, is unavoidable, and its origins not due to negligence or lack of care on the part of the Contractor; such events may include, but not be limited to, acts of the Government in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes or more as included in GCC Clause 52.

(x) **Goods** mean the Contractor's Plant, Equipment, Materials or any of them as appropriate.

(y) **GCC** means the General Conditions of Contract.

(z) **Government** means the Government of the People's Republic of Bangladesh.

(aa) **Guarantee Test(s)**means the test(s) specified in the Employer's Requirements to be carried out to ascertain whether the Facilities or a specified part thereof is able to attain the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees, in accordance with the provisions of GCC Sub-Clause 25.2 (Guarantee Test) hereof.

(bb) **Head of the Procuring Entity** means the Secretary of a Ministry or a Division, the Head of a Government Department or Directorate; or the Chief Executive, by whatever designation called, of a local Government agency, an autonomous or semi-autonomous body or a corporation, or a corporate body established under the Companies Act;

(cc) **Installation Services** means all those services ancillary to the supply of the Plant for the Facilities, to be provided by the Contractor under the Contract, such as transportation and provision of marine or other similar insurance, inspection, expediting, site preparation works (including the provision and use of Contractor's Equipment and the supply of all construction materials required), installation, testing, pre-commissioning, commissioning, operations, maintenance, the provision of operations and maintenance manuals, training, etc. as the case may require.

(dd) **Intended Completion Date** is the date calculated from the Commencement Date as specified in the PC**C**, on which it is intended that the Contractor shall complete the Works and Physical services as specified in the Contract and may be revised only by the Project Manager by issuing an extension of time or an acceleration order.

(ee) **Materials** means things of all kinds other than Plant intended to form or forming part of the Permanent Works, including the supply-only materials, if any, to be supplied by the Contractor under the Contract.

(ff) **Month** means calendar month.

(gg) **Original Contract Price** is the Contract Price stated in the Procuring Entity's Notification of Award (Form PG5A-7) and

further clearly determined in the **PCC**.

(hh) **Operational Acceptance** means the acceptance by the Employer of the Facilities (or any part of the Facilities where the Contract provides for acceptance of the Facilities in parts), which certifies the Contractor's fulfillment of the Contract in respect of Functional Guarantees of the Facilities (or the relevant part thereof) in accordance with the provisions of contract

(ii) **PCC** means the Particular Conditions of Contract.

(jj) **Plant** means permanent plant, equipment, machinery, apparatus, materials, articles, ancillary buildings/structure and things of all kinds to be provided and incorporated in the Facilities by the Contractor under the Contract (including the spare parts to be supplied by the Contractor), but does not include Contractor's Equipment.

(kk) **Pre Commissioning** means the testing, checking and other requirements specified in the Employer's Requirements that are to be carried out by the Contractor in preparation for Commissioning.

(ll) **Procuring Entity/Employer/Purchaser** means, as the context so applies, an Entity having administrative and financial powers to undertake procurement of Plant and Physical services using public funds and is as named in the **PCC** who employs the Contractor to carry out the contractual obligations.

(mm) **Project Manager** is the person named in the **PCC** or any other competent person appointed by the Procuring Entity and notified to the Contractor who is responsible for supervising the execution and completion of the plant and services and administering the Contract.

(nn) **Schedules** means the document(s) entitled schedules, completed by the Contractor and submitted with the Tender Submission Letter, as included in the Contract. Such document may include the data, lists and schedules of rates and/or prices.

(oo) **Site** means the land and other places upon which the Facilities are to be installed, and such other land or places as may be specified in the PC**C** as forming part of the Site

(pp) **Site Investigation Reports** are those that were included in the Tender Document and are factual and interpretative reports about the surface and subsurface conditions at the Site.

(qq) **Specification** means the Specification of the goods/works/related services included in the Contract and any modifications or additions to the specifications made or approved by the Project Manager in accordance with the Contract.

(rr) **Start Date** is the date defined in the **PCC** and it is the last date when the Contractor shall commence execution of the

goods/works/services under the Contract.

(ss) **Subcontractor** means a person or corporate body, who has a contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.

(tt) **Time for Completion** means the time within which Completion of the Facilities as a whole (or of a part of the Facilities where a separate Time for Completion of such part has been prescribed) is to be attained, in accordance with the relevant provisions of the Contract.

(uu) **Variation** means any change to the plant and services directly procured from the original Contractor to cover increases or decreases in quantities, including the introduction of new work items that are either due to change of plans, design or alignment to suit actual field conditions, within the general scope and physical boundaries of the contract.

(vv) **Works** means all works associated with the construction, reconstruction, site preparation, demolition, repair, maintenance or renovation of railways, roads, highways, or a building, an infrastructure or structure or an installation or any construction work relating to excavation, installation of equipment and materials, decoration, as well as physical services ancillary to works as detailed in the **PCC**, if the value of those services does not exceed that of the Works themselves.

(ww) Writing means communication written by hand or machine duly signed and includes properly authenticated messages by facsimile or electronic mail.

2. Interpretation

2.1 In interpreting the GCC, singular also means plural, male also means female or neuter, and the other way around. Headings in the GCC shall not be deemed part thereof or be taken into consideration in the interpretation or construance of the Contract. Words have their normal meaning under the language of the Contract unless specifically defined.

2.2 Entire Agreement.

The Contract constitutes the entire agreement between the Employer and the Contractor and supersedes all communications, negotiations and agreements (whether written or verbal) of parties with respect thereto made prior to the date of Contract Agreement; except those stated under GCC Sub Clause 6.1(j).

2.3 Non waiver.

(a) Subject to GCC Sub Clause 2.3(b), 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.

2.4. 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.

2.5. Sectional completion

If sectional completion is specified in the **PCC**, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. Communications & Notices

3.1 Communications between Parties such as notice, request or consent required or permitted to be given or made by one party to the other pursuant to the Contract shall be in writing to the addresses specified in the **PCC.**

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

3.3 A Party may change its address for notice hereunder by giving the other Party notice of such change to the address.

4. Governing Law

4.1 The Contract shall be governed by and interpreted in accordance with the laws of the People's Republic of Bangladesh.

5. Governing Language

5.1 The Contract shall be written in English. All correspondences and documents relating to the Contract may be written in English. 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 English, in which case, for purposes of interpretation of the Contract, such translation shall govern.

5.2 The Contractor shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Documents Forming the Contract and Priority of Documents

6.1 The following documents forming the Contract shall be interpreted in the following order of priority:

(a) the signed Contract Agreement (**Form PG5A-8**);

(b) the Notification of Award (**PG5A-7**);

(c) the completed Tender and the **Appendix to the Tender**;

(d) the Price Schedule for Plant and Services **(PG5A-3);**

(e) the Particular Conditions of Contract;

(f) the General Conditions of Contract;

(g) the Technical Specifications;

(h) Personnel Information;

(i) Equipment Information;

(j) the Drawings; and

(k) Any other document listed in the PCC forming part of the Contract.

7. Contract Agreement

7.1 The parties shall enter into a Contract Agreement within twenty eight (28) days from the date of issuance of the Notification of Award (NOA). The costs of stamp duties and similar charges, if any, designated by the applicable law in connection with entry into the Contract Agreement, shall be borne by the Employer.

8. Assignment

8.1 Neither the Contractor nor the Employer shall assign, in whole or in part, its obligations under the Contract; except with the Employer's prior written approval.

9. Eligibility

9.1 The Contractor and its Subcontractor(s) shall have the nationality of a country other than that specified in the PCC.

9.2 All materials, equipment, plant, and supplies used by the Contractor in both permanent and temporary works and services supplied under the Contract shall have their origin in the countries except any specified in the PCC.

10. Gratuities / Agency fees

10.1 No fees, gratuities, rebates, gifts, commissions or other payments, other than those included in the Contract, shall be given or received in connection with the procurement process or in the Contract execution.

11. Confidential Details

11.1 The Employer and the Contractor 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 Contractor may furnish to its Subcontractor such documents, data, and other information it receives from the Employer to the extent required for the Subcontractor to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Contractor under GCC Clause 11.

11.2 The Employer shall not use such documents, data, and other information received from the Contractor for any purposes unrelated to the Contract. Similarly, the Contractor shall not use such documents, data, and other information received from the Employer for any purpose other than the design, construction, or other work and services required for the performance of the Contract.

11.3 The obligations of a party under GCC Sub Clauses 11.1 and 11.2 above, however, shall not apply to information that: the Employer or Contractor needs to share with institutions participating in the financing of the Contract; now or hereafter enters the public domain through no fault of that party; 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 otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

11.4 The above provisions of GCC Clause 11 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 Works or any part thereof.

11.5 The provisions of GCC Clause 11 shall survive completion or termination, for whatever reason.

12. Joint Venture (JV)

12.1 If the Contractor is a Joint Venture, Consortium, or Association (JVCA),

(a) each partner of the JV shall be jointly and severally liable for all liabilities and ethical or legal obligations to the Employer for the performance of the Contract;

(b) the JV partners shall nominate a representative who shall have the authority to conduct all business including the receipt of payments for and on behalf of all partners of the JV;

(c) in the event of a dispute that results in legal action against all partners of the JV, if they are available and if only one partner is available, then that partner alone shall answer on behalf of all partners and, if the complaint lodged is proven, the penalty shall be applicable on that lone partner as whatever penalty all the partners would have received.

(d) the JV shall notify the Employer of its composition and legal status which shall not be altered without the prior approval of the Employer.

(e) alteration of partners shall only be allowed if any of the partners is found to be incompetent or has any serious difficulties which may impact the overall implementation of the goods/works/service, whereby the incoming partner shall require to possess qualifications equal to or higher than that of the outgoing partner.

(f) if any of the partners of JV has been debarred from participating in any procurement activity due to corrupt, fraudulent, collusive or coercive practices, that JV partner shall be altered following provisions under GCC Sub Clause 12.1 (d) and (e), while in case the Leading Partner has been debarred due to the same reasons stated herein the Contract shall be terminated as stated under GCC Sub Clause 67.1(b).

13. Possession of the Site

13.1 The Employer shall give possession of the Site or part(s) of the Site, to the Contractor on the date(s) stated in the PCC. If possession of a part of the Site is not given by the date stated in the PCC, the Employer will be deemed to have delayed the start of the

relevant activities, and this will be a Compensation Event.

14. Access to the Site

14.1 The Contractor shall allow the Engineer and any person authorised by the Engineer access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

15. Safety, Security and Protection of the Environment

15.1 The Contractor shall throughout the execution and completion of the Works and the remedying of any defects therein:

(a) take all reasonable steps to safeguard the health and safety of all workers working on the Site and other persons entitled to be on it, and to keep the Site in an orderly state;

(b) provide and maintain at the Contractor's own cost all lights, guards, fencing, warning signs and watching for the protection of the Works or for the safety on-site; and

(c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of the Contractors methods of operation.

16. Working Hours

16.1 The Contractor shall not perform any work on the Site on the weekly holidays, or during the night or outside the normal working hours, or on any religious or public holiday, without the prior written approval of the Project Manager.

17. Welfare of Laborers

17.1 The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's personnel relating to their employment, health, safety, welfare, immigration and shall allow them all their legal rights.

17.2 The Contractor, in particular, shall provide proper accommodation to his or her labourers and arrange proper water supply, conservancy and sanitation arrangements at the site for all necessary hygienic requirements and for the prevention of epidemics in accordance with relevant regulations, rules and orders of the government.

17.3 The Contractor, further in particular, shall pay reasonable wages to his or her labourers, and pay them in time. In the event of delay in payment the Employer may effect payments to the labourers and recover the cost from the Contractor.

17.4 The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take appropriate protective measures to prevent accidents that could result in injury. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

18. Child Labor

18.1 The Contractor shall not employ any child to perform any work that is economically exploitative, or is likely to be hazardous to, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development

in compliance with the applicable laws and other relevant treaties ratified by the government.

19. Fossils& antiquities

19.1 All fossils, coins, articles of value or antiquity, and structures and other remains or items of geological or archaeological interest found on the Site shall be placed under the care and authority of the Employer. The Contractor shall take reasonable precautions to prevent Contractor's Personnel or other persons from removing or damaging any of these findings.

19.2 The Contractor shall, upon discovery of any such finding, promptly give notice to the Project Manager, who shall issue instructions for dealing with it. If the Contractor suffers delay and/or incurs cost from complying with the instructions, the Contractor shall give a further notice to the Project Manager and shall be entitled subject to Claims under GCC Clause 71

20. Corrupt, Fraudulent, Collusive or Coercive Practices

20.1 The Government requires that Employer, as well as the Contractor shall observe the highest standard of ethics during the implementation of procurement proceedings and the execution of the Contract.

20.2 The Government requires that Employer, as well as the Contractor shall, during the Procurement proceedings and the execution of the Contract under public funds, ensure-

(a) strict compliance with the provisions of Section 64 of the Public Procurement Act, 2006

(b) abiding by the code of ethics as mentioned in the Rule127 of the Public Procurement Rules, 2008;

(c) that neither it, nor any other member of its staff, or any other agents or intermediaries working on its behalf engages in any such practice as detailed in GCC Sub Clause 20.2.

20.3 For the purposes of GCC Sub Clause 20.2, the terms set forth below as follows

(a) "**corrupt practice**" means offering, giving or promising to give, receiving, or soliciting either directly or indirectly, to any officer or employee of a Employer or other public or private authority or individual, a gratuity in any form; employment or any other thing or service of value as an inducement with respect to an act or decision or method followed by a Employer in connection with a Procurement proceeding or Contract execution;

(b) **"fraudulent practice"** means the misrepresentation or omission of facts in order to influence a decision to be taken in a Procurement proceeding or Contract execution;

(c) **collusive practice**" means a scheme or arrangement between two (2) or more Persons, with or without the knowledge of the Employer, that is designed to arbitrarily reduce the number of Tenders submitted or fix Tender prices at artificial, non-competitive levels, thereby denying a Employer the benefits of competitive price arising from genuine and open competition; or

(d) "**Coercive practice**" means harming or threatening to harm, directly or indirectly, Persons or their property to influence a decision to be taken in the Procurement proceeding or the execution of the Contract, and this will include creating obstructions in the normal submission process used for Tenders.

20.4 Should any corrupt, fraudulent, collusive or coercive practice of any kind come to the knowledge of the Employer, it will, in the first place, allow the Contractor to provide an explanation and shall, take actions only when a satisfactory explanation is not received. Such decision and the reasons thereof, shall be recorded in the record of the procurement proceedings and promptly communicated to the Contractor. Any communications between the Contractor and the Employer related to matters of alleged fraud or corruption shall be in writing.

20.5 If corrupt, fraudulent, collusive or coercive practices of any kind determined by the Employer against the Contractor alleged to have carried out such practices, the Employer will :

(a) exclude the Contractor from further participation in the particular Procurement proceeding; or

(b) declare, at its discretion, the Contractor to be ineligible to participate in further Procurement proceedings, either indefinitely or for a specific period of time.

20.6 20.6 The Contractor shall be aware of the provisions on corruption, fraudulence, collusion and coercion in Section 64 of the Public Procurement Act, 2006 and Rule 127 of the Public Procurement Rules, 2008.

21. License/ Use of Technical Information

21.1 For the operation and maintenance of the Plant, the Contractor hereby grants a non-exclusive and non-transferable license (without the right to sub-license) to the Employer under the patents, utility models or other industrial property rights owned by the Contractor or by a third Party from whom the Contractor has received the right to grant licenses thereunder, and shall also grant to the Employer a non-exclusive and non-transferable right (without the right to sub-license) to use the know-how and other technical information disclosed to the Employer under the Contract. Nothing contained herein shall be construed as transferring ownership of any patent, utility model, trademark, design, copyright, know-how or other intellectual property right from the Contractor or any third Party to the Employer.

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

B. Subject Matter of Contract

22. Scope of Facilities

22.1 Unless otherwise expressly limited in the Employer's Requirements, the Contractor's obligations cover the provision of all Plant and the performance of all Installation Services required for the design, and the manufacture (including procurement, quality assurance, construction, installation, associated civil works, Pre Commissioning and delivery) of the Plant, and the installation, completion and commissioning of the Facilities in accordance with the plans, procedures, specifications, drawings, codes and any other documents as specified in the Section, Employer's Requirements. Such specifications include, but are not limited to, the provision of supervision and engineering services; the supply of labor, materials, equipment, spare parts and accessories; Contractor's Equipment; construction utilities and supplies; temporary materials, structures and facilities; transportation (including, without limitation, unloading and hauling to, from and at the Site); and storage, except for those supplies, works and services that will be provided or performed by the Employer, as set forth in the Appendix to the Contract Agreement titled Scope of Works and Supply by the Employer.

22.2 The Contractor shall, unless specifically excluded in the Contract, perform all such work and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Completion of the Facilities as if such work and/or items and materials were expressly mentioned in the Contract.

22.3 In addition to the supply of Mandatory Spare Parts included in the Contract, the Contractor agrees to supply spare parts required for the operation and maintenance of the Facilities for the period **specified in the PCC** and the provisions, if any, **specified in the PCC.** However, the identity, specifications and quantities of such spare parts and the terms and conditions relating to the supply thereof are to be agreed between the Employer and the Contractor, and the price of such spare parts shall be that given in **Price Schedule No.1 & 2 under form PG5A-3**, which shall be added to the Contract Price. The price of such spare parts shall include the purchase price therefor and other costs and expenses (including the Contractor's fees) relating to the supply of spare parts.

23. Time for Commencement

23.1 The Contractor shall attain Completion of the Facilities or of a part where a separate time for Completion of such part is specified in the Contract, within the time **stated in the PCC** or within such extended time to which the Contractor shall be entitled under GCC Clause 65.1 hereof.

24. Time for Completion

24.1 The Contractor shall attain Completion of the Facilities or of a part where a separate time for Completion of such part is specified in the Contract, within the time **stated in the PCC**or within such extended time to which the Contractor shall be entitled under GCC Clause 65.1 hereof.

25. Employer's Responsibilities

25.1 All information and/or data to be supplied by the Employer as described in the Appendix to the Contract Agreement titled Scope of Works and Supply by the Employer, shall be deemed to be accurate, except when the Employer expressly states otherwise

25.2 The Employer shall be responsible for acquiring and providing legal and physical possession of the Site and access thereto, and for providing possession of and access to all other areas reasonably required for the proper execution of the Contract, including all requisite rights of way, as specified in the Appendix to the Contract Agreement titled Scope of Works and Supply by the Employer. The Employer shall give full possession of and accord all rights of access thereto on or before the date(s) specified in that Appendix.

25.3 The Employer shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which (a) such authorities or undertakings require the Employer to obtain in the Employer's name, (b) are necessary for the execution of the Contract, including those required for the performance by both the Contractor and the Employer of their respective obligations under the Contract, and (c) are specified in the Appendix (Scope of Works and Supply by the Employer).

25.4 If requested by the Contractor, the Employer shall use its best endeavors to assist the Contractor in obtaining in a timely and expeditious manner all permits, approvals and/or licenses necessary for the execution of the Contract from all local, state or national government authorities or public service undertakings that such authorities or undertakings require the Contractor or Subcontractors or the personnel of the Contractor or Subcontractors, as the case may be, to obtain

25.5 Unless otherwise specified in the Contract or agreed upon by the Employer and the Contractor, the Employer shall provide sufficient, properly qualified operating and maintenance personnel; shall supply and make available all raw materials, utilities, lubricants, chemicals, catalysts, other materials and facilities; and shall perform all work and services of whatsoever nature, including those required by the Contractor to properly carry out Pre Commissioning, Commissioning and Guarantee Tests, all in accordance with the provisions of the Appendix to the Contract Agreement titled Scope of Works and Supply by the Employer, at or before the time specified in the program furnished by the Contractor under the provisions of contract specified or as otherwise agreed upon by the Employer and the Contractor.

25.6 The Employer shall be responsible for the continued operation of the Facilities after Completion, in accordance with GCC Sub-Clause 39.8, and shall be responsible for facilitating the Guarantee Test(s) for the Facilities, in accordance with GCC Sub-Clause 40.2.

25.7 All costs and expenses involved in the performance of the obligations under this GCC Clause 25 shall be the responsibility of the Employer, save those to be incurred by the Contractor with respect to the performance of Guarantee Tests, in accordance with

GCC Sub-Clause 40.2.

25.8 In the event that the Employer shall be in breach of any of his obligations under this Clause, the additional cost incurred by the Contractor in consequence thereof shall be determined by the Project Manager and added to the Contract Price

26. Contractor's Responsibilities

26.1 The Contractor shall design, manufacture including associated purchases and/or subcontracting, install and complete the Facilities in accordance with the Contract. When completed, the Facilities should be fit for the purposes for which they are intended as defined in the Contract.

26.2 The Contractor confirms that it has entered into this Contract on the basis of a proper examination of the data relating to the Facilities including any data as to boring tests provided by the Employer, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site if access thereto was available and of other data readily available to it relating to the Facilities as of the date twenty-eight (28) days prior to tender submission. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Facilities.

26.3 The Contractor shall acquire and pay for all permits, approvals and/or licenses from all local, state or national government authorities or public service undertakings in the country where the Site is located which such authorities or undertakings require the Contractor to obtain in its name and which are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Subcontractor's personnel and entry permits for all imported Contractor's Equipment. The Contractor shall acquire all other permits, approvals and/or licenses that are not the responsibility of the Employer under GCC Sub-Clause 25.3 hereof and that are necessary for the performance of the Contract.

27. Employer's and Contractor's Risks

27.1 The Employer carries the risks that the Contract states are Employer's risks and the Contractor carries the risks that the Contract states are Contractor's risks.

28. Employer's Risks

28.1 From the Start Date until the Defects Correction Certificate has been issued, the following are Employer's risks:

(a) the risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to

i. use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or

ii. negligence, breach of statutory duty, or interference with any legal right by the Employer or by any person employed by or Contracted to him except the Contractor.

iii. the risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Employer or in the Employer's design, or due to war or radioactive contamination directly affecting the country

where the Works are to be executed.

28.2 From the Completion Date until the Defects Correction Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is Employer's risk, except loss or damage due to:

(a) a Defect which existed on the Completion Date;

(b) an event occurring before the Completion Date, which was not itself Employer's risk; or

(c) the activities of the Contractor on the Site after the Completion Date.

29. Contractor's Risks

29.1 From the Start Date until the Defects Correction Certificate has been issued the risks of personal injury, death, and loss of or damage to property including without limitation, the Works, Plant, Materials, and Equipment, which are not Employer's risks are Contractor's risks.

C. Execution of the Facilities

30. Representatives

31.1 Project Manager

If the Project Manager is not named in the Contract, then within fourteen (14) days of the Effective Date, the Employer shall appoint and notify the Contractor in writing of the name of the Project Manager. The Employer may from time to time appoint some other person as the Project Manager in place of the person previously so appointed, and shall give a notice of the name of such other person to the Contractor without delay. No such appointment shall be made at such a time or in such a manner as to impede the progress of work on the Facilities. Such appointment shall only take effect upon receipt of such notice by the Contractor. The Project Manager shall represent and act for the Employer at all times during the performance of the Contract. All notices, instructions, orders, certificates, approvals and all other communications under the Contract shall be given by the Project Manager, except as herein otherwise provided.

All notices, instructions, information and other communications given by the Contractor to the Employer under the Contract shall be given to the Project Manager, except as herein otherwise provided.

30.2 Contractor's Representative & Construction Manager

30.2.1 If the Contractor's Representative is not named in the Contract, then within fourteen (14) days of the Effective Date, the Contractor shall appoint the Contractor's Representative and shall request the Employer in writing to approve the person so appointed. If the Employer makes no objection to the appointment within fourteen (14) days, the Contractor's Representative shall be deemed to have been approved. If the Employer objects to the appointment within fourteen (14) days giving the reason therefor, then the Contractor shall appoint a replacement within fourteen (14) days of such objection, and the foregoing provisions of this GCC Sub-Clause 30.2.1 shall apply thereto.

30.2.2 The Contractor's Representative shall represent and act for the Contractor at all times during the performance of the Contract

and shall give to the Project Manager all the Contractor's notices, instructions, information and all other communications under the Contract.

The Contractor shall not revoke the appointment of the Contractor's Representative without the Employer's prior written consent, which shall not be unreasonably withheld. If the Employer consents thereto, the Contractor shall appoint some other person as the Contractor's Representative, pursuant to the procedure set out in GCC Sub-Clause 30.2.1.

30.2.3 . The Contractor's Representative may, subject to the approval of the Employer which shall not be unreasonably withheld, at any time delegate to any person any of the powers, functions and authorities vested in him or her. Any such delegation may be revoked at any time. Any such delegation or revocation shall be subject to a prior notice signed by the Contractor's Representative, and shall specify the powers, functions and authorities thereby delegated or revoked. No such delegation or revocation shall take effect unless and until a copy thereof has been delivered to the Employer and the Project Manager.

Any act or exercise by any person of powers, functions and authorities so delegated to him or her in accordance with this GCC Sub-Clause 30.2.3 shall be deemed to be an act or exercise by the Contractor's Representative.

30.2.4 From the commencement of installation of the Facilities at the Site until Completion, the Contractor's Representative shall appoint a suitable person as the Construction Manager. The Construction Manager shall supervise all work done at the Site by the Contractor and shall be present at the Site throughout normal working hours except when on leave, sick or absent for reasons connected with the proper performance of the Contract. Whenever the Construction Manager is absent from the Site, a suitable person shall be appointed to act as the Construction Manager's deputy.

30.2.5 The Employer may by notice to the Contractor object to any representative or person employed by the Contractor in the execution of the Contract who, in the reasonable opinion of the Employer, may behave inappropriately, may be incompetent or negligent, or may commit a serious breach of the Site regulations provided under GCC Sub-Clause 37.4. The Employer shall provide evidence of the same, whereupon the Contractor shall remove such person from the Facilities.

30.2.6 If any representative or person employed by the Contractor is removed in accordance with GCC Sub-Clause 30.2.5, the Contractor shall, where required, promptly appoint a replacement.

31. Work Program

31.1 Contractor's Organization

The Contractor shall supply to the Employer and the Project Manager a chart showing the proposed organization to be established by the Contractor for carrying out work on the Facilities within twenty-one (21) days of the Effective Date. The chart shall include the identities of the key personnel and the curricula vitae of such key personnel to be employed shall be supplied together with the chart. The Contractor shall promptly inform the Employer and the Project Manager in writing of any revision or alteration of such an organization chart.

31.2 Program of Performance

Within twenty-eight (28) days after the Effective Date, the Contractor shall submit to the Project Manager a detailed program of performance of the Contract, made in a form acceptable to the Project Manager and showing the sequence in which it proposes to design, manufacture, transport, assemble, install and Pre Commission the Facilities, as well as the date by which the Contractor reasonably requires that the Employer shall have fulfilled its obligations under the Contract so as to enable the Contractor to execute the Contract in accordance with the program and to achieve Completion, Commissioning and Acceptance of the Facilities in accordance with the Contract. The program so submitted by the Contractor shall accord with the Time Schedule included in the Appendix to the Contract Agreement titled Time Schedule, and any other dates and periods specified in the Contract. The Contractor shall update and revise the program as and when appropriate or when required by the Project Manager, but without modification in the Times for Completion specified in the PCC pursuant to Sub-Clause 24.1 and any extension granted in accordance with GCC Clause 65.1, and shall submit all such revisions to the Project Manager.

31.3 **Progress Report**

The Contractor shall monitor progress of all the activities specified in the program referred to in GCC Sub-Clause 31.2 above, and supply a progress report to the Project Manager every month.

The progress report shall be in a form acceptable to the Project Manager and shall indicate: (a) percentage completion achieved compared with the planned percentage completion for each activity; and (b) where any activity is behind the program, giving comments and likely consequences and stating the corrective action being taken.

31.4 **Progress of Performance**

If at any time the Contractor's actual progress falls behind the program referred to in GCC Sub-Clause 31.2, or it becomes apparent that it will so fall behind, the Contractor shall, at the request of the Employer or the Project Manager, prepare and submit to the Project Manager a revised program, taking into account the prevailing circumstances, and shall notify the Project Manager of the steps being taken to expedite progress so as to attain Completion of the Facilities within the Time for Completion

under GCC Sub-Clause 24.1, any extension thereof entitled under GCC Sub-Clause 65.1, or any extended period as may otherwise be agreed upon between the Employer and the Contractor.

31.5 **Procedures**

The Contract shall be executed in accordance with the Contract Documents including the procedures given in the Forms and Procedures of the Employer's Requirements. The Contractor may execute the Contract in accordance with its own standard project execution plans and procedures to the extent that they do not conflict with the provisions contained in the Contract.

32. Subcontractor

32.1 Subcontracting the whole of the Plant and Service by the Contractor shall not be permissible. The Contractor shall be responsible for the acts or defaults of any Subcontractor, his or her agents or employees, as if they were the acts or defaults of the Contractor.

32.2 The Contractor shall not be required to obtain consent from the Project Manager or his representative, for suppliers solely of Materials or to a subcontract for which the Specialist Subcontractor(s) is already named in the Contract.

32.3 The prior consent, in writing, of the Engineer shall however be obtained for other proposed Subcontractor(s).

33. Nominated Subcontractor

33.1 Nominated Subcontractor named in the Contract shall be entitled to execute the specific components of the Works stated in the **PCC.**

33.2 The Contractor shall not be under obligations to employ a Nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Engineer as soon as practicable, with supporting particulars while there are reasons to believe that the Subcontractor does not have sufficient competence, resources or financial strength, or does not accept to indemnify the Contractor against and from any negligence or misuse of Goods by the nominated Subcontractor, or does not accept to enter into a subcontract which specifies that, for the subcontracted work including design, if any, the Nominated Subcontractor shall undertake to the Contractor such obligations and liabilities as will enable the contractor to discharge his or her liabilities under the Contract.

34. Other Contractors

34.1 The Contractor shall cooperate and share the Site with other Contractors, public authorities, utilities, the Engineer and the Employer between the dates given in the Schedule of other Contractors. The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of other Contractors, and shall notify the Contractor of any such modification.

35. Design and Engineering

35.1 **Specifications and Drawings**

35.1.1 The Contractor shall execute the basic and detailed design and the engineering work in compliance with the provisions of the Contract, or where not so specified, in accordance with good engineering practice. The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents that it has prepared, whether such specifications, drawings and other documents have been approved by the Project Manager or not, provided that such discrepancies, errors or omissions are not because of inaccurate information furnished in writing to the Contractor by or on behalf of the Employer.

35.1.2 The Contractor shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designated by or on behalf of the Employer, by giving a notice of such disclaimer to the Project Manager.

35.2 **Codes and Standards**

Wherever references are made in the Contract to codes and standards in accordance with which the Contract shall be executed, the edition or the revised version of such codes and standards current at the date twenty-eight (28) days prior to date of tender submission shall apply unless otherwise specified. During Contract execution, any changes in such codes and standards shall be applied subject to approval by the Employer and shall be treated in accordance with GCC Clause 64.

35.3. **Approval/Review of Technical Documents by Project Manager**

35.3.1 The Contractor shall prepare or cause its Subcontractors to prepare, and furnish to the Project Manager the documents listed in the Appendix to the Contract Agreement titled List of Documents for Approval or Review, for its approval or review as specified and in accordance with the requirements of GCC Sub-Clause 31.2 (Program of Performance).

Any part of the Facilities covered by or related to the documents to be approved by the Project Manager shall be executed only after the Project Manager's approval thereof.

GCC Sub-Clauses 35.3.2 through 35.3.6 shall apply to those documents requiring the Project Manager's approval, but not to those furnished to the Project Manager for its review only

35.3.2 Within fourteen (14) days after receipt by the Project Manager of any document requiring the Project Manager's approval in accordance with GCC Sub-Clause 35.3.1, the Project Manager shall either return one copy thereof to the Contractor with its approval endorsed thereon or shall notify the Contractor in writing of its disapproval thereof and the reasons therefor and the modifications that the Project Manager proposes. If the Project Manager fails to take such

action within the said fourteen (14) days, then the said document shall be deemed to have been approved by the Project Manager.

35.3.3. The Project Manager shall not disapprove any document, except on the grounds that the document does not comply with the Contract or that it is contrary to good engineering practice.

35.3.4 If the Project Manager disapproves the document, the Contractor shall modify the document and resubmit it for the Project Manager's approval in accordance with GCC Sub-Clause 35.3.2. If the Project Manager approves the document subject to modification(s), the Contractor shall make the required modification(s), whereupon the document shall be deemed to have been approved.

35.3.5 The Project Manager's approval, with or without modification of the document furnished by the Contractor, shall not relieve the Contractor of any responsibility or liability imposed upon it by any provisions of the Contract except to the extent that any subsequent failure results from modifications required by the Project Manager.

35.3.6 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Project Manageran amended document and obtained the Project Manager's approval thereof, pursuant to the provisions of this GCC Sub-Clause 35.3. If the Project Manager requests any change in any already approved document and/or in any document based thereon, the provisions of GCC Clause 64 shall apply to such request.

36. Procurement

36.1 **Plant**

Subject to GCC Sub-Clause 60.2, the Contractor shall procure and transport all Plant in an expeditious and orderly manner to the Site.

36.2 **Employer-Supplied Plant**

If the Appendix to the Contract Agreement titled Scope of Works and Supply by the Employer, provides that the Employer shall furnish any specific items to the Contractor, the following provisions shall apply:

36.2.1 The Employer shall, at its own risk and expense, transport each item to the place on or near the Site as agreed upon by the Parties and make such item available to the Contractor at the time specified in the program furnished by the Contractor, pursuant to GCC Sub-Clause 31.2, unless otherwise mutually agreed.

36.2.2 Upon receipt of such item, the Contractor shall inspect the same visually and notify the Project Manager of any detected shortage, defect or default. The Employer shall immediately remedy any shortage, defect or default, or the Contractor shall, if practicable and possible, at the request of the Employer, remedy such shortage, defect or default at the Employer's cost and expense. After inspection, such item shall fall under the care,

custody and control of the Contractor. The provision of this GCC Sub-Clause 36.2.2 shall apply to any item supplied to remedy any such shortage or default or to substitute for any defective item, or shall apply to defective items that have been repaired.

36.2.3 The foregoing responsibilities of the Contractor and its obligations of care, custody and control shall not relieve the Employer of liability for any undetected shortage, defect or default, nor place the Contractor under any liability for any such shortage, defect or default whether under GCC Clause 42 or under any other provision of Contract.

36.3 **Transportation**

36.3.1 The Contractor shall at its own risk and expense transport all the materials and the Contractor's Equipment to the Site by the mode of transport that the Contractor judges most suitable under all the circumstances.

36.3.2 Unless otherwise provided in the Contract, the Contractor shall be entitled to select any safe mode of transport operated by any person to carry the materials and the Contractor's Equipment.

36.3.3 Upon dispatch of each shipment of materials and the Contractor's Equipment, the Contractor shall notify the Employer by telex, cable, facsimile or electronic means, of the description of the materials and of the Contractor's Equipment, the point and means of dispatch, and the estimated time and point of arrival in the country where the Site is located, if applicable, and at the Site. The Contractor shall furnish the Employer with relevant shipping documents to be agreed upon between the Parties.

36.3.4 The Contractor shall be responsible for obtaining, if necessary, approvals from the authorities for transportation of the materials and the Contractor's Equipment to the Site. The Employer shall use its best endeavors in a timely and expeditious manner to assist the Contractor in obtaining such approvals, if requested by the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any claim for damage to roads, bridges or any other traffic facilities that may be caused by the transport of the materials and the Contractor's Equipment to the Site.

36.4 **Customs Clearance**

The Contractor shall, at its own expense, handle all imported materials and Contractor's Equipment at the point(s) of import and shall handle any formalities for customs clearance, subject to the Employer's obligations under GCC Sub-Clause 60.2, provided that if applicable laws or regulations require any application or act to be made by or in the name of the Employer, the Employer shall take all necessary steps to comply with such laws or regulations. In the event of delays in customs clearance that are not the fault of the Contractor, the Contractor shall be entitled to an extension in the Time for Completion, pursuant to GCC Clause 65.

37. Installation

37.1 **Setting Out/Supervision**

37.1.1 Bench Mark: The Contractor shall be responsible for the true and proper setting-out of the Facilities in relation to bench

marks, reference marks and lines provided to it in writing by or on behalf of the Employer.

If, at any time during the progress of installation of the Facilities, any error shall appear in the position, level or alignment of the Facilities, the Contractor shall forthwith notify the Project Manager of such error and, at its own expense, immediately rectify such error to the reasonable satisfaction of the Project Manager. If such error is based on incorrect data provided in writing by or on behalf of the Employer, the expense of rectifying the same shall be borne by the Employer.

37.1.2 Contractor's Supervision: The Contractor shall give or provide all necessary superintendence during the installation of the Facilities, and the Construction Manager or its deputy shall be constantly on the Site to provide full-time superintendence of the installation. The Contractor shall provide and employ only technical personnel who are skilled and experienced in their respective callings and supervisory staff who are competent to adequately supervise the work at hand.

37.2 Labor:

37.2.1 Engagement of Staff and Labor

(a) Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labor, local or otherwise, and for their payment, housing, feeding and transport.

(b) The Contractor shall provide and employ on the Site in the installation of the Facilities such skilled, semi-skilled and unskilled labor as is necessary for the proper and timely execution of the Contract. The Contractor is encouraged to use local labor that has the necessary skills.

(c) The Contractor shall be responsible for obtaining all necessary permit(s) and/or visa(s) from the appropriate authorities for the entry of all labor and personnel to be employed on the Site into the country where the Site is located. The Employer will, if requested by the Contractor, use his best endeavors in a timely and expeditious manner to assist the Contractor in obtaining any local, state, national or government permission required for bringing in the Contractor's personnel.

(d) The Contractor shall at its own expense provide the means of repatriation to all of its and its Subcontractor's personnel employed on the Contract at the Site to the place where they were recruited or to their domicile. It shall also provide suitable temporary maintenance of all such persons from the cessation of their employment on the Contract to the date programmed for their departure. In the event that the Contractor defaults in providing such means of transportation and temporary maintenance, the Employer may provide the same to such personnel and recover the cost of doing so

from the Contractor.

37.2.2 Persons in the Service of Employer

The Contractor shall not recruit, or attempt to recruit, staff and labor from amongst the Employer's Personnel.

37.2.3 Facilities for Staff and Labor

Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. The Contractor shall also provide facilities for the Employer's Personnel as stated in the Specification.

The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works

37.3 **Contractor's Equipment**

37.3.1 All Contractor's Equipment brought by the Contractor onto the Site shall be deemed to be intended to be used exclusively for the execution of the Contract. The Contractor shall not remove the same from the Site without the Project Manager's consent that such Contractor's Equipment is no longer required for the execution of the Contract.

37.3.2 Unless otherwise specified in the Contract, upon completion of the Facilities, the Contractor shall remove from the Site all Equipment brought by the Contractor onto the Site and any surplus materials remaining thereon.

37.3.3 The Employer will, if requested, use its best endeavors to assist the Contractor in obtaining any local, state or national government permission required by the Contractor for the export of the Contractor's Equipment imported by the Contractor for use in the execution of the Contract that is no longer required for the execution of the Contract.

37.4 **Site Regulations and Safety**

The Employer and the Contractor shall establish Site regulations setting out the rules to be observed in the execution of the Contract at the Site and shall comply therewith. The Contractor shall prepare and submit to the Employer, with a copy to the Project Manager, proposed Site regulations for the Employer's approval, which approval shall not be unreasonably withheld.

Such Site regulations shall include, but shall not be limited to, rules in respect of security, safety of the Facilities, gate control, sanitation, medical care, and fire prevention. reasonable costs incurred by the Employer in connection therewith shall be paid by the Contractor to the Employer. Otherwise, the cost of such remedial work shall be borne by the Employer.

37.5 **Site Clearance**

37.5.1 Site Clearance in Course of Performance: In the course of carrying out the Contract, the Contractor shallkeep theSite reasonably free from all unnecessary obstruction, store or remove any surplus materials, clear away any wreckage, rubbish or temporary works from the Site, and remove any Contractor's Equipment no longer required for execution of the Contract

37.6 **Opportunities for Other Contractors**

37.6.1 The Contractor shall, upon written request from the Employer or the Project Manager, give all reasonable opportunities for carrying out the work to any other contractors employed by the Employer on or near the Site.

37.6.2 If the Contractor, upon written request from the Employer or the Project Manager, makes available to other contractors any roads or ways the maintenance for which the Contractor is responsible, permits the use by such other contractors of the Contractor's Equipment, or provides any other service of whatsoever nature for such other contractors, the Employer shall fully compensate the Contractor for any loss or damage caused or occasioned by such other contractors in respect of any such use or service, and shall pay to the Contractor reasonable remuneration for the use of such equipment or the provision of such services.

37.7 **Emergency Work**

37.7.1 If, by reason of an emergency arising in connection with and during the execution of the Contract, any protective or remedial work is necessary as a matter of urgency to prevent damage to the Facilities, the Contractor shall immediately carry out such work.

If the Contractor is unable or unwilling to do such work immediately, the Employer may do or cause such work to be done as the Employer may determine is necessary in order to prevent damage to the Facilities. In such event the Employer shall, as soon as practicable after the occurrence of any such emergency, notify the Contractor in writing of such emergency, the work done and the reasons therefor. If the work done or caused to be done by the Employer is work that the Contractor was liable to do at its own expense under the Contract.

37.7.2 Clearance of Site after Completion: After Completion of all parts of the Facilities, the Contractor shall clear away and remove all wreckage, rubbish and debris of any kind from the Site, and shall leave the Site and Facilities in a clean and safe condition.

37.8 **Watching and Lighting**

The Contractor shall provide and maintain at its own expense all lighting, fencing, and watching when and where necessary for the proper execution and the protection of the Facilities, or for the safety of the owners and occupiers of adjacent property and for the safety of the public.

38. Test & Inspection

38.1 The Contractor shall at its own expense carry out at the place of manufacture and/or on the Site all such tests and/or inspections of the Plant and any part of the Facilities as are specified in the Contract.

38.2 The Employer and the Project Manager or their designated representatives shall be entitled to attend the aforesaid test and/or inspection, provided that the Employer shall bear all costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

38.3 38.3 Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give a reasonable advance notice of such test and/or inspection and of the place and time thereof to the Project Manager. The Contractor shall obtain from any relevant third Party or manufacturer any necessary permission or consent to enable the Employer and the Project Manager or their designated representatives to attend the test and/or inspection.

38.4 The Contractor shall provide the Project Manager with a certified report of the results of any such test and/or inspection. If the Employer or Project Manager or their designated representatives fails to attend the test and/or inspection, or if it is agreed between the Parties that such persons shall not do so, then the Contractor may proceed with the test and/or inspection in the absence of such persons, and may provide the Project Manager with a certified report of the results thereof.

38.5 38.5 The Project Manager may require the Contractor to carry out any test and/or inspection not required by the Contract, provided that the Contractor'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 impede the progress of work on the Facilities and/or the Contractor's performance of its other obligations under the Contract, due allowance will be made in respect of the Time for Completion and the other obligations so affected.

38.6 If any Plant or any part of the Facilities fails to pass any test and/or inspection, the Contractor shall either rectify or replace such Plant or part of the Facilities and shall repeat the test and/or inspection upon giving a notice under GCC Sub-Clause 38.3.

38.7 If any dispute or difference of opinion shall arise between the Parties in connection with or arising out of the test and/or inspection of the Plant or part of the Facilities that cannot be settled between the Parties within a reasonable period of time, it may be referred to an 72.2.

38.8 The Contractor shall afford the Employer and the Project Manager, at the Employer's expense, access at any reasonable time to any place where the Plant are being manufactured or the Facilities are being installed, in order to inspect the progress and the manner of manufacture or installation, provided that the Project Manager shall give the Contractor a reasonable prior notice.

38.9 The Contractor agrees that neither the execution of a test and/or inspection of Plant or any part of the Facilities, nor the attendance by the Employer or the Project Manager, nor the issue of any test certificate pursuant to GCC Sub-Clause 38.4, shall release the Contractor from any other responsibilities under the Contract.

38.10 39.10 No part of the Facilities or foundations shall be covered up on the Site without the Contractor carrying out any test and/or inspection required under the Contract. The Contractor shall give a reasonable notice to the Project Manager whenever any such parts of the Facilities or foundations are ready or about to be ready for test and/or inspection; such test and/or inspection and notice thereof shall be subject to the requirements of the Contract.

38.11 The Contractor shall uncover any part of the Facilities or foundations, or shall make openings in or through the same as the Project Manager may from time to time require at the Site, and shall reinstate and make good such part or parts.

38.12 If any parts of the Facilities or foundations have been covered up at the Site after compliance with the requirement of GCC Sub-Clause 38.10 and are found to be executed in accordance with the Contract, the expenses of uncovering, making openings in or through, reinstating, and making good the same shall be borne by the Employer, and the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been delayed or impeded in the performance of any of its obligations under the Contract.

39. Completion of the Facilities

39.1 As soon as the Facilities or any part thereof has, in the opinion of the Contractor, been completed operationally and structurally and put in a tight and clean condition as specified in the Employer's Requirements, excluding minor items not materially affecting the operation or safety of the Facilities, the Contractor shall so notify the Employer in writing.

39.2 Within seven (7) days after receipt of the notice from the Contractor under GCC Sub-Clause 39.1, the Employer shall supply the operating and maintenance personnel specified in the Appendix to the Contract Agreement titled Scope of Works and Supply by the Employer for Pre Commissioning of the Facilities or any part thereof.

Pursuant to the Appendix to the Contract Agreement titled Scope of Works and Supply by the Employer, the Employer shall also provide, within the said seven (7) day period, the raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters required for Pre Commissioning of the Facilities or any part thereof.

39.3 As soon as reasonably practicable after the operating and maintenance personnel have been supplied by the Employer and the raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters have been provided by the Employer in accordance with GCC Sub-Clause 39.2, the Contractor shall commence Pre-commissioning of the Facilities or the relevant part thereof in preparation for Commissioning, subject to GCC Sub-Clause 40.5.

39.4 As soon as all works in respect of Pre-commissioning are completed and, in the opinion of the Contractor, the Facilities or

39.5 The Project Manager shall, within fourteen (14) days after receipt of the Contractor's notice under GCC Sub-Clause 39.4, either issue a Completion Certificate in the form specified in the Employer's Requirements (Forms and Procedures), stating that the Facilities or that part thereof have reached Completion as of the date of the Contractor's notice under GCC Sub-Clause 39.4, or notify the Contractor in writing of any defects and/or deficiencies.

If the Project Manager notifies the Contractor of any defects and/or deficiencies, the Contractor shall then correct such defects and/or deficiencies, and shall repeat the procedure described in GCC Sub-Clause 39.4.

39.6 If the Project Manager is satisfied that the Facilities or that part thereof have reached Completion, the Project Manager shall, within seven (7) days after receipt of the Contractor's repeated notice, issue a Completion Certificate stating that the Facilities or that part thereof have reached Completion as of the date of the Contractor's repeated notice.

39.7 If the Project Manager is not so satisfied, then it shall notify the Contractor in writing of any defects and/or deficiencies within seven (7) days after receipt of the Contractor's repeated notice, and the above procedure shall be repeated.

39.8 If the Project Manager fails to issue the Completion Certificate and fails to inform the Contractor of any defects and/or deficiencies within fourteen (14) days after receipt of the Contractor's notice under GCC Sub-Clause 39.4 or within seven (7) days after receipt of the Contractor's repeated notice under GCC Sub-Clause 39.5, or if the Employer makes use of the Facilities or part thereof, then the Facilities or that part thereof shall be deemed to have reached Completion as of the date of the Contractor's notice or repeated notice, or as of the Employer's use of the Facilities, as the case may be.

39.9 As soon as possible after Completion, the Contractor shall complete all outstanding minor items so that the Facilities are fully in accordance with the requirements of the Contract, failing which the Employer will undertake such completion and deduct the costs thereof from any monies owing to the Contractor.

39.10 Upon Completion, the Employer shall be responsible for the care and custody of the Facilities or the relevant part thereof, together with the risk of loss or damage thereto, and shall thereafter take over the Facilities or the relevant part thereof.

40. Commissioning and Operational Acceptance

40.1 **Commissioning**

40.1.1 Commissioning of the Facilities or any part thereof shall be commenced by the Contractor immediately after issue of the Completion Certificate by the Project Manager, pursuant to GCC Sub-Clause 39.5, or immediately after the date of the deemed Completion, under GCC Sub-Clause 39.6.

40.1.2 The Employer shall supply the operating and maintenance personnel and all raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters required for Commissioning.

40.1.3 In accordance with the requirements of the Contract, the Contractor's and Project Manager's advisory personnel shall attend the Commissioning, including the Guarantee Test, and shall advise and assist the Employer.

40.2 **Guarantee Test**

40.2.1 Subject to GCC Sub-Clause 40.5, the Guarantee Test and repeats thereof shall be conducted by the Contractor during Commissioning of the Facilities or the relevant part thereof to ascertain whether the Facilities or the relevant part can attain the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees. The Employer shall promptly provide the Contractor with such information as the Contractor may reasonably require in relation to the conduct and results of the Guarantee Test and any repeats thereof.

40.2.2 If for reasons not attributable to the Contractor, the Guarantee Test of the Facilities or the relevant part thereof cannot be successfully completed within the period from the date of Completion **specified in the PCC** or any other period agreed upon by the Employer and the Contractor, the Contractor shall be deemed to have fulfilled its obligations with respect to the Functional Guarantees, and GCC Sub-Clauses 43.2 and 43.3 shall not apply.

40.3 **Operational Acceptance**

40.3.2 At any time after any of the events set out in GCC Sub-Clause 40.3.1 have occurred, the Contractor may give a notice to the Project Manager requesting the issue of an Operational Acceptance Certificate in the form provided in the Employer's Requirements (Forms and Procedures)in respect of the Facilities or the part thereof specified in such notice as of the date of such notice.

40.3.3 The Project Manager shall, after consultation with the Employer, and within seven (7) days after receipt of the Contractor's notice, issue an Operational Acceptance Certificate.

40.3.4 If within seven (7) days after receipt of the Contractor's notice, the Project Manager fails to issue the Operational Acceptance Certificate or fails to inform the Contractor in writing of the justifiable reasons why the Project Manager has not issued the Operational Acceptance Certificate, the Facilities or the relevant part thereof shall be deemed to have been accepted as of the date of the Contractor's said notice.

40.4 **Partial Acceptance**

40.4.1 If the Contract specifies that Completion and Commissioning shall be carried out in respect of parts of the Facilities, the provisions relating to Completion and Commissioning including the Guarantee Test shall apply to each such part of the Facilities individually, and the Operational Acceptance Certificate shall be issued accordingly for each such part of the Facilities.

40.4.2 If a part of the Facilities comprises facilities such as buildings, for which no Commissioning or Guarantee Test is required, then the Project Manager shall issue the Operational Acceptance Certificate for such facility when it attains Completion, provided that the Contractor shall thereafter complete any outstanding minor items that are listed in the Operational Acceptance Certificate

40.5 **Delayed Pre-commissioning and/or Guarantee Test**

40.5.1 In the event that the Contractor is unable to proceed with the Pre-commissioning of the Facilities pursuant to Sub-Clause 39.3, or with the Guarantee Test pursuant to Sub-Clause 40.2, for reasons attributable to the Employer either on account of non-availability of other facilities under the responsibilities of other contractor(s), or for reasons beyond the Contractor's control, the provisions leading to "deemed" completion of activities such as Completion, pursuant to GCC Sub-Clause 39.6, and Operational Acceptance, pursuant to GCC Sub-Clause 40.3.4, and Contractor's obligations regarding Defect Liability Period, pursuant to GCC Sub-Clause 42.2, Functional Guarantee, pursuant to GCC Clause 43, and Care of Facilities, pursuant to GCC Clause 48, and GCC Clause 66.1, Suspension, shall not apply. In this case, the following provisions shall apply.

40.5.2 When the Contractor is notified by the Project Manager that he will be unable to proceed with the activities and obligations pursuant to clauses 58 & 59, the Contractor shall be entitled to the following:

(a) the Time of Completion shall be extended for the period of suspension without imposition of liquidated damages pursuant to GCC Sub-Clause 41.2;

(b) payments due to the Contractor in accordance with the provision specified in the Appendix to the Contract Agreement titled Terms and Procedures of Payment, which would not have been payable in normal circumstances due to non-completion of the subject activities, shall be released to the Contractor against submission of a security in the form of a bank guarantee of equivalent amount acceptable to the Employer, and which shall become null and void when the Contractor will have complied with its obligations regarding those payments, subject to the provision of Sub-Clause 40.5.3 below;

(c) the expenses towards the above security and extension of other securities under the contract, of which validity needs to be extended, shall be reimbursed to the Contractor by the Employer;

(d) the additional charges towards the care of the Facilities pursuant to GCC Sub-Clause 48.1 shall be reimbursed to the Contractor by the Employer for the period between the notification mentioned above and the notification mentioned in Sub-Clause 40.5.4 below. The provision of GCC Sub-Clause 49.2 shall apply to the Facilities during the same period.

40.5.3 In the event that the period of suspension under above Sub-Clause 40.5.1 actually exceeds one hundred eighty (180) days, the Employer and Contractor shall mutually agree to any additional compensation payable to the Contractor.

40.5.4 When the Contractor is notified by the Project Manager that the plant is ready for Pre-commissioning, the Contractor shall proceed without delay in performing Pre-commissioning, in accordance with Clause 39.

D. Guarantees and Liabilities

41. Completion Time Guarantee

41.1 The Contractor guarantees that it shall attain Completion of the Facilities (or a part for which a separate time for completion is specified) within the Time for Completion specified in the PCC pursuant to GCC Sub-Clause 24.1, or within such extended time to which the Contractor shall be entitled under GCC Clause 65 hereof

41.2 If the Contractor fails to attain Completion of the Facilities or any part thereof within the Time for Completion or any extension thereof under GCC Clause 65, the Contractor shall pay to the Employer liquidated damages in the amount specified in the PCC as a percentage rate of the Contract Price or the relevant part thereof. The aggregate amount of such liquidated damages shall in no event exceed the amount specified as “Maximum” in the PCC as a percentage rate of the Contract Price. Once the “Maximum” is reached, the Employer may consider termination of the Contract,

pursuant to GCC Sub-Clause 67.2.2.

Such payment shall completely satisfy the Contractor's obligation to attain Completion of the Facilities or the relevant part thereof within the Time for Completion or any extension thereof under GCC Clause 65. The Contractor shall have no further liability whatsoever to the Employer in respect thereof.

However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the Facilities or from any other obligations and liabilities of the Contractor under the Contract.

Save for liquidated damages payable under this GCC Sub-Clause 41.2, the failure by the Contractor to attain any milestone or other act, matter or thing by any date specified in the Appendix to the Contract Agreement titled Time Schedule, and/or other program of work prepared pursuant to GCC Sub-Clause 31.2 shall not render the Contractor liable for any loss or damage thereby suffered by the Employer..

41.3 If the Contractor attains Completion of the Facilities or any part thereof before the Time for Completion or any extension thereof under GCC Clause 65, the Employer shall pay to the Contractor a bonus in the amount **specified in the PCC.** The aggregate amount of such bonus shall in no event exceed the amount **specified as "Maximum" in the PCC.**

42. Defect Liability

42.1 The Contractor warrants that the Facilities or any part thereof shall be free from defects in the design, engineering, materials and workmanship of the Plant supplied and of the work executed.

42.2 The Defect Liability Period shall be five hundred and forty (540) days from the date of Completion of the Facilities (or any part thereof) or one year from the date of Operational Acceptance of the Facilities (or any part thereof), whichever first occurs, unless specified otherwise in the PCC pursuant to GCC Sub-Clause 42.10.

If during the Defect Liability Period any defect should be found in the design, engineering, materials and workmanship of the Plant supplied or of the work executed by the Contractor, the Contractor shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at its cost, repair, replace or otherwise make good as the Contractor shall determine at its discretion, such defect as well as any damage to the Facilities caused by such defect. The Contractor shall not be responsible for the repair, replacement or making good of any defect or of any damage to the Facilities arising out of or resulting from any of the following causes:

(a) improper operation or maintenance of the Facilities by the Employer;

(b) operation of the Facilities outside specifications provided in the Contract; or

(c) Normal wear and tear.

42.3 The Contractor's obligations under this GCC Clause 42 shall not

apply to:

(a) any materials that are supplied by the Employer under GCC Sub-Clause 36.2, are normally consumed in operation, or have a normal life shorter than the Defect Liability Period stated herein;

(b) any designs, specifications or other data designed, supplied or specified by or on behalf of the Employer or any matters for which the Contractor has disclaimed responsibility herein; or

(c) Any other materials supplied or any other work executed by or on behalf of the Employer, except for the work executed by the Employer under GCC Sub-Clause 42.7.

42.4 The Employer shall give the Contractor a notice stating the nature of any such defect together with all available evidence thereof, promptly following the discovery thereof. The Employer shall afford all reasonable opportunity for the Contractor to inspect any such defect.

42.5 The Employer shall afford the Contractor all necessary access to the Facilities and the Site to enable the Contractor to perform its obligations under this GCC Clause 42.

The Contractor may, with the consent of the Employer, remove from the Site any Plant or any part of the Facilities that are defective if the nature of the defect, and/or any damage to the Facilities caused by the defect, is such that repairs cannot be expeditiously carried out at the Site.

42.6 If the repair, replacement or making good is of such a character that it may affect the efficiency of the Facilities or any part thereof, the Employer may give to the Contractor a notice requiring that tests of the defective part of the Facilities shall be made by the Contractor immediately upon completion of such remedial work, whereupon the Contractor shall carry out such tests.

If such part fails the tests, the Contractor shall carry out further repair, replacement or making good, as the case may be, until that part of the Facilities passes such tests. The tests shall be agreed upon by the Employer and the Contractor.

42.7 If the Contractor fails to commence the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the Contractor, proceed to do such work, and the reasonable costs incurred by the Employer in connection therewith shall be paid to the Employer by the Contractor or may be deducted by the Employer from any monies due the Contractor or claimed under the Performance Security.

42.8 If the Facilities or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Employer because of any of the aforesaid reasons.

42.9 Except as provided in GCC Clauses 42 and 49, the Contractor shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Facilities or any part thereof, the Plant, design or engineering or work executed that appear after Completion of the Facilities or any part thereof, except where such defects are the result of the gross negligence, fraud, or criminal or willful action of the Contractor.

42.10 In addition, any such component of the Facilities, and during the period of time as may be **specified in the PCC,** shall be subject to an extended defect liability period. Such obligation of the Contractor shall be in addition to the defect liability period specified under GCC Sub-Clause 42.2.

43. Functional Guarantees

43.1 The Contractor guarantees that during the Guarantee Test, the Facilities and all parts thereof shall attain the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees, subject to and upon the conditions therein specified.

43.2 If, for reasons attributable to the Contractor, the minimum level of the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees, are not met either in whole or in part, the Contractor shall at its cost and expense make such changes, modifications and/or additions to the Plant or any part thereof as may be necessary to meet at least the minimum level of such Guarantees. The Contractor shall notify the Employer upon completion of the necessary changes, modifications and/or additions, and shall request the Employer to repeat the Guarantee Test until the minimum level of the Guarantees has been met. If the Contractor eventually fails to meet the minimum level of Functional Guarantees, the Employer may consider termination of the Contract, pursuant to GCC Sub-Clause 64.2.2.

43.3 If, for reasons attributable to the Contractor, the Functional Guarantees specified in the Appendix to the Contract Agreement titled Functional Guarantees, are not attained either in whole or in part, but the minimum level of the Functional Guarantees specified in the said Appendix to the Contract Agreement is met, the Contractor shall, at the Contractor's option, either

(a) make such changes, modifications and/or additions to the Facilities or any part thereof that are necessary to attain the Functional Guarantees at its cost and expense, and shall request the Employer to repeat the Guarantee Test or

(b) pay liquidated damages to the Employer in respect of the failure to meet the Functional Guarantees in accordance with the provisions in the Appendix to the Contract Agreement titled Functional Guarantees.

43.4 The payment of liquidated damages under GCC Sub-Clause 43.3, up to the limitation of liability specified in the Appendix to the Contract Agreement titled Functional Guarantees, shall completely satisfy the Contractor's guarantees under GCC Sub-Clause 43.3, and the Contractor shall have no further liability whatsoever to the Employer in respect thereof. Upon the payment of such liquidated

damages by the Contractor, the Project Manager shall issue the Operational Acceptance Certificate for the Facilities or any part thereof in respect of which the liquidated damages have been so paid.

44. Patent Indemnity

44.1 The Contractor shall, subject to the Employer's compliance with GCC Sub-Clause 44.2, indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Employer 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 Facilities by the Contractor or the use of the Facilities in the country where the Site is located; and (b) the sale of the products produced by the Facilities in any country.

Such indemnity shall not cover any use of the Facilities or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the Facilities or any part thereof, or any products produced thereby in association or combination with any other equipment, plant or materials not supplied by the Contractor, pursuant to the Contract Agreement.

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

If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim.

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

44.3 The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Contractor 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 Employer.

45. Limitation of Liability

45.1 Except in cases of criminal negligence or willful misconduct,

(a) neither Party shall be liable to the other Party, 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, which may be suffered by the other Party in connection with the Contract, other than specifically provided as any obligation of the Party in the Contract, and

(b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the amount resulting from the application of the multiplier specified in the PCC, to the Contract Price or, if a multiplier is not so specified, 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 Contractor to indemnify the Employer with respect to patent infringement..

E. Risk Distribution

46. Transfer of Ownership

46.1 Ownership of the Plant (including spare parts) to be imported into the country where the Site is located shall be transferred to the Employer upon loading on to the mode of transport to be used to convey the Plant from the country of origin to that country.

46.2 Ownership of the Plant (including spare parts) procured in the country where the Site is located shall be transferred to the Employer when the Plant are brought on to the Site.

46.3 Ownership of the Contractor's Equipment used by the Contractor and its Subcontractors in connection with the Contract shall remain with the Contractor or its Subcontractors.

46.4 Ownership of any Plant in excess of the requirements for the Facilities shall revert to the Contractor upon Completion of the Facilities or at such earlier time when the Employer and the Contractor agree that the Plant in question are no longer required for the Facilities.

46.5 Notwithstanding the transfer of ownership of the Plant, the responsibility for care and custody thereof together with the risk of loss or damage thereto shall remain with the Contractor pursuant to GCC Clause 32 (Care of Facilities) hereof until Completion of the Facilities or the part thereof in which such Plant are incorporated.

47. Care of Facilities

47.1 The Contractor shall be responsible for the care and custody of the Facilities or any part thereof until the date of Completion of the Facilities pursuant to GCC Clause 39 or, where the Contract provides for Completion of the Facilities in parts, until the date of Completion of the relevant part, and shall make good at its own cost any loss or damage that may occur to the Facilities or the relevant part thereof from any cause whatsoever during such period. The Contractor shall also be responsible for any loss or damage to the Facilities caused by the Contractor or its Subcontractors in the course of any work carried out, pursuant to GCC Clause 42. Notwithstanding the foregoing, the Contractor shall not be liable for any loss or damage to the Facilities or that part thereof caused by reason of any of the matters specified or

referred to in paragraphs (a), (b) and (c) of GCC Sub-Clauses 48.2.

47.2 If any loss or damage occurs to the Facilities or any part thereof or to the Contractor's temporary facilities by reason of

(a) insofar as they relate to the country where the Site is located, nuclear reaction, nuclear radiation, radioactive contamination, pressure wave caused by aircraft or other aerial objects, or any other occurrences that an experienced contractor could not reasonably foresee, or if reasonably foreseeable could not reasonably make provision for or insure against, insofar as such risks are not normally insurable on the insurance market and are mentioned in the general exclusions of the policy of insurance, including War Risks and Political Risks, taken out under GCC Clause 34 hereof; or

(b) any use or occupation by the Employer or any third Party other than a Subcontractor, authorized by the Employer of any part of the Facilities; or

(c) any use of or reliance upon any design, data or specification provided or designated by or on behalf of the Employer, or any such matter for which the Contractor has disclaimed responsibility herein,

47.3 the Employer shall pay to the Contractor all sums payable in respect of the Facilities executed, notwithstanding that the same be lost, destroyed or damaged, and will pay to the Contractor the replacement value of all temporary facilities and all parts thereof lost, destroyed or damaged. If the Employer requests the Contractor in writing to make good any loss or damage to the Facilities thereby occasioned, the Contractor shall make good the same at the cost of the Employer in accordance with GCC Clause 64. If the Employer does not request the Contractor in writing to make good any loss or damage to the Facilities thereby occasioned, the Employer shall either request a change in accordance with GCC Clause 64, excluding the performance of that part of the Facilities thereby lost, destroyed or damaged, or, where the loss or damage affects a substantial part of the Facilities, the Employer shall terminate the Contract pursuant to GCC Sub-Clause 66.1 hereof.

47.4 The Contractor shall be liable for any loss of or damage to any Contractor's Equipment, or any other property of the Contractor used or intended to be used for purposes of the Facilities, except (i) as mentioned in GCC Sub-Clause 42.2 with respect to the Contractor's temporary facilities, and (ii) where such loss or damage arises by reason of any of the matters specified in GCC Sub-Clauses 47.2 (b) and (c).

48. Loss of or Damage to Property; Accident or Injury to Workers; Indemnification

48.1 Subject to GCC Sub-Clause 48.3, the Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any person or loss of or damage to any property other than the Facilities whether accepted or not, arising in connection with the supply and

installation of the Facilities and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.

48.2 If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability under GCC Sub-Clause 48.1, the Employer shall promptly give the Contractor a notice thereof and the Contractor may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

48.3 If the Contractor fails to notify the Employer within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. Unless the Contractor has so failed to notify the Employer within the twenty-eight (28) day period, the Employer shall make no admission that may be prejudicial to the defense of any such proceedings or claim.

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

48.4 The Employer shall indemnify and hold harmless the Contractor and its employees, officers and Subcontractors from any liability for loss of or damage to property of the Employer, other than the Facilities not yet taken over, that is caused by fire, explosion or any other perils, in excess of the amount recoverable from insurances procured under GCC Clause 49, provided that such fire, explosion or other perils were not caused by any act or failure of the Contractor.

48.5 The Party entitled to the benefit of an indemnity under this GCC Clause 48 shall take all reasonable measures to mitigate any loss or damage which has occurred. If the Party fails to take such measures, the other Party's liabilities shall be correspondingly reduced.

49. Insurance

49.1 To the extent specified in the Appendix to the Contract Agreement titled Insurance Requirements, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said Appendix. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, who should not unreasonably withhold such approval.

(a) Cargo Insurance During Transport

Covering loss or damage occurring while in transit from the Contractor's or Subcontractor's works or stores until arrival at the Site, to the Plant (including spare parts therefor) and to the Contractor's Equipment.

(b) Installation All Risks Insurance

Covering physical loss or damage to the Facilities at the Site, occurring prior to Completion of the Facilities, with extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the Defect Liability Period while the Contractor is on the Site for the purpose of performing its obligations during the Defect Liability Period.

(c) Third Party Liability Insurance

Covering bodily injury or death suffered by third Parties including the Employer's personnel, and loss of or damage to property occurring in connection with the supply and installation of the Facilities.

(d) Automobile Liability Insurance

Covering use of all vehicles used by the Contractor or its Subcontractors, whether or not owned by them, in connection with the execution of the Contract.

(e) Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

(f) Employer's Liability

In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed.

(g) Other Insurances

Such other insurances as may be specifically agreed upon by the Parties hereto as listed in the Appendix to the Contract Agreement titled Insurance Requirements.

49.2 The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 49.1, except for the Third Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Contractor's Subcontractors shall be named as co-insureds under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 49.1 except for the Cargo Insurance during Transportation, Workers' Compensation and Employer's Liability Insurances. All insurer's rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.

49.3 The Contractor shall, in accordance with the provisions of the Appendix to the Contract Agreement titled Insurance Requirements, deliver to the Employer certificates of insurance or copies of the insurance policies as evidence that the required policies are in full force and effect. The certificates shall provide that no less than twenty-one (21) days' notice shall be given to the Employer by insurers prior to cancellation or material modification of a policy.

49.4 The Contractor shall ensure that, where applicable, its Subcontractor(s) shall take out and maintain in effect adequate insurance policies for their personnel and vehicles and for work executed by them under the Contract, unless such Subcontractors are covered by the policies taken out by the Contractor.

49.5 The Employer shall at its expense take out and maintain in effect during the performance of the Contract those insurances specified in the Appendix to the Contract Agreement titled Insurance Requirements, in the sums and with the deductibles and other conditions specified in the said Appendix. The Contractor and the Contractor's Subcontractors shall be named as co-insured under all such policies. All insurers' rights of subrogation against such co-insured for losses or claims arising out of the performance of the Contract shall be waived under such policies. The Employer shall deliver to the Contractor satisfactory evidence that the required insurances are in full force and effect. The policies shall provide that not less than twenty-one (21) days' notice shall be given to the Contractor by all insurers prior to any cancellation or material modification of the policies. If so requested by the Contractor, the Employer shall provide copies of the policies taken out by the Employer under this GCC Sub-Clause 49.5.

49.6 If the Contractor fails to take out and/or maintain in effect the insurances referred to in GCC Sub-Clause 49.1, the Employer may take out and maintain in effect any such insurances and may from time to time deduct from any amount due to the Contractor under the Contract any premium that the Employer shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Contractor. If the Employer fails to take out and/or maintain in effect the insurances referred to in GCC 49.5, the Contractor may take out and maintain in effect any such insurances and may from time to time deduct from any amount due the Employer under the Contract any premium that the Contractor shall have paid to the insurer, or may otherwise recover such amount as a debt due from the Employer. If the Contractor fails to or is unable to take out and maintain in effect any such insurances, the Contractor shall nevertheless have no liability or responsibility towards the Employer, and the Contractor shall have full recourse against the Employer for any and all liabilities of the Employer herein.

49.7 Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies affected by it pursuant to this GCC Clause 49, and all monies payable by any insurers shall be paid to the Contractor. The Employer shall give to the Contractor all such reasonable assistance as may be required by the Contractor. With respect to insurance claims in which the Employer's interest is involved, the Contractor shall not give any release or make any compromise with the insurer without the prior written consent of the Employer. With respect to insurance claims in which the Contractor's interest is involved, the Employer shall not give any release or make any compromise with the insurer without the prior written consent of the Contractor.

50. Unforeseen Conditions

50.1 If, during the execution of the Contract, the Contractor shall encounter on the Site any physical conditions other than climatic conditions, or artificial obstructions that could not have been reasonably foreseen prior to the date of the Contract Agreement by an experienced contractor on the basis of reasonable

examination of the data relating to the Facilities including any data as to boring tests, provided by the Employer, and on the basis of information that it could have obtained from a visual inspection of the Site if access thereto was available, or other data readily available to it relating to the Facilities, and if the Contractor determines that it will in consequence of such conditions or obstructions incur additional cost and expense or require additional time to perform its obligations under the Contract that would not have been required if such physical conditions or artificial obstructions had not been encountered, the Contractor shall promptly, and before performing additional work or using additional Plant or Contractor's Equipment, notify the Project Manager in writing beforehand:

(a the physical conditions or artificial obstructions on the Site that could not have been reasonably foreseen;

(b) the additional work and/or Plant and/or Contractor's Equipment required, including the steps which the Contractor will or proposes to take to overcome such conditions or obstructions;

(c) the extent of the anticipated delay; and

(d) the additional cost and expense that the Contractor is likely to incur.)

On receiving any notice from the Contractor under this GCC Sub-Clause 50.1, the Project Manager shall promptly consult with the Employer and Contractor and decide upon the actions to be taken to overcome the physical conditions or artificial obstructions encountered. Following such consultations, the Project Manager shall instruct the Contractor, with a copy to the Employer, of the actions to be taken.

50.2 Any reasonable additional cost and expense incurred by the Contractor in following the instructions from the Project Manager to overcome such physical conditions or artificial obstructions referred to in GCC Sub-Clause 50.1 shall be paid by the Employer to the Contractor as an addition to the Contract Price.

50.3 If the Contractor is delayed or impeded in the performance of the Contract because of any such physical conditions or artificial obstructions referred to in GCC Sub-Clause 50.1, the Time for Completion shall be extended in accordance with GCC Clause 60.

51. Change in Laws and Regulation

51.1 Unless otherwise specified in the Contract, if after the Contract, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in Bangladesh (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.

52. Force Majeure

52.1 In this Clause, "Force Majeure" means an exceptional event or circumstance:

(a) which is beyond a Party's control;

(b) which such Party could not reasonably have provided against before entering into the Contract;

(c) which, having arisen, such Party could not reasonably have avoided or overcome; and

(d) which is not substantially attributable to the other Party.

52.2 Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

(i) war, hostilities (whether war be declared or not), invasion, act of foreign enemies;

(ii) rebellion, terrorism, sabotage by persons other than the Contractor's Personnel, revolution, insurrection, military or usurped power, or civil war;

(iii) riot, commotion, disorder, strike or lockout by persons other than the Contractor's Personnel;

(iv) munitions of war, explosive materials, ionising radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such munitions, explosives, radiation or radio-activity, and

(v) natural catastrophes such as cyclone, hurricane, typhoon, tsunami, storm surge, floods, earthquake , landslides, fires, epidemics, quarantine restrictions, or volcanic activity;

(vi) freight embargoes;

(vii) acts of the Government in its sovereign capacity.

53. Notice of Force Majeure

53.1 If a Party is or will be prevented from performing its substantial obligations under the Contract by Force Majeure, then it shall give notice to the other Party of the event or circumstances constituting the Force Majeure and shall specify the obligations, the performance of which is or will be prevented. The notice shall be given within 14 days after the Party became aware, or should have become aware, of the relevant event or circumstance constituting Force Majeure

53.2 The Party shall, having given notice, be excused performance of its obligations for so long as such Force Majeure prevents it from performing them.

53.3 Notwithstanding any other provision of this Clause, Force Majeure shall not apply to obligations of either Party to make payments to the other Party under the Contract.

54. Duty to Minimize Delay

54.1 Each Party shall at all times use all reasonable endeavors to minimize any delay in the performance of the Contract as a result of Force Majeure.

54.2 A Party shall give notice to the other Party when it ceases to be affected by the Force Majeure.

55. Consequences of Force Majeure

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

55.2 The Employer may suspend the delivery or contract implementation, wholly or partly, by written order for a certain period of time, as it deems necessary due to force majeure as defined in the contract.

55.3 Delivery made either upon the lifting or the expiration of the suspension order. However, if the Employer terminates the contract as stated under GCC clause 66, resumption of delivery cannot be done.

55.4 The Employer determines the existence of a force majeure that will be the basis of the issuance of suspension of order.

F. Payment

56. Contract Price

56.1 The Contract Price shall be paid as specified in the Contract Agreement Form **PG5A- 8.**

56.2 Unless an adjustment clause is **provided for in the PCC,** the Contract Price shall be a firm lump sum not subject to any alteration, except in the event of a Change in the Facilities or as otherwise provided in the Contract.

56.3 Subject to GCC Sub-Clauses 25.2, 26.1 and 50 hereof, the Contractor shall be deemed to have satisfied itself as to the correctness and sufficiency of the Contract Price, which shall, except as otherwise provided for in the Contract, cover all its obligations under the Contract.

56.4 Prices shall be adjusted for fluctuations in the cost of inputs only if provided for in the PCC. If so provided, the amounts as certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amount. The generic formula indicated below in the form as specified in the PCC applies:

P= A + B (Im/Io)

where:

P is the adjustment factor

A and **B** are Coefficients specified in the PCC, representing the nonadjustable and adjustable portions, respectively, of the Contract; and

Im is the Index during the month the work has been executed and **Io** is the Index prevailing twenty eight (28) days prior to the deadline for submission of Tender.

The Indexes to be used is as published by the Bangladesh Bureau of Statistics (BBS) on a monthly basis. In case not available, then other countries or authorities of the sources mentioned in **Appendix to the Tender** may be used.

56.5 If the value of the Index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment

made in the next or in the final payment certificate. The Index value shall be deemed to take account of all changes in price due to fluctuations.

57. Terms of Payment

57.1 The Contract Price shall be paid as specified in the Contract Agreement and **in the Appendix to the Contract Agreement titled Terms and Procedures of Payment**, which also outlines the procedures to be followed in making application for and processing payments.

57.2 No payment made by the Employer herein shall be deemed to constitute acceptance by the Employer of the Facilities or any part(s) thereof.

57.3 In the event that the Employer fails to make any payment by its respective due date or within the period set forth in the Contract, the Employer shall pay to the Contractor interest on the amount of such delayed payment at the rate(s) shown in the Appendices to the Contract Agreement titled Terms and Procedures of Payment, for the period of delay until payment has been made in full, whether before or after judgment or arbitrage award.

57.4 The currency or currencies in which payments are made to the Contractor under this Contract shall be specified in the Appendices to the Contract Agreement titled Terms and Procedures of Payment, subject to the general principle that payments will be made in the currency or currencies in which the Contract Price has been stated in the Contractor's tender.

58. Advance Payment Security

58.1 The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security in an amount equal to the advance payment calculated in accordance with the Appendix to the Contract Agreement titled Terms and Procedures of Payment, and in the same currency or currencies.

58.2 The security shall be in the form provided in the tender documents or in another form acceptable to the Employer. The amount of the security shall be reduced in proportion to the value of the Facilities executed by and paid to the Contractor from time to time, and shall automatically become null and void when the full amount of the advance payment has been recovered by the Employer. The security shall be returned to the Contractor immediately after its expiration.

59. Performance Security

59.1 The Contractor shall, within twenty-eight (28) days of the notification of contract award, provide a security for the due performance of the Contract in the amount **specified in the PCC.**

59.2 The performance security shall be denominated in the currency or currencies of the Contract, or in a freely convertible currency acceptable to the Employer, and shall be in the form provided in Section 5, Tender and Contract Forms, corresponding to the type of bank guarantee stipulated by the Employer in the PCC, or in another form acceptable to the Employer.

59.3 Unless otherwise specified in the PCC, the security shall be reduced by half on the date of the Operational Acceptance. The Security shall become null and void, or shall be reduced pro rata to the Contract Price of a part of the Facilities for which a separate

Time for Completion is provided, five hundred and forty (540) days after Completion of the Facilities or three hundred and sixty five (365) days after Operational Acceptance of the Facilities, whichever occurs first; provided, however, that if the Defects Liability Period has been extended on any part of the Facilities pursuant to GCC Sub-Clause 42.8 hereof, the Contractor shall issue an additional security in an amount proportionate to the Contract Price of that part. The security shall be returned to the Contractor immediately after its expiration, provided, however, that if the Contractor, pursuant to GCC Sub-Clause 42.10, is liable for an extended defect liability obligation, the performance security shall be extended for the period specified in the PCC pursuant to GCC Sub-Clause 42.10 and up to the amount specified in the PCC.

59.4 The Employer shall not make a claim under the Performance Security, except for amounts to which the Employer is entitled under the Contract. The Employer shall indemnify and hold the Contractor harmless against and from all damages, losses and expenses (including legal fees and expenses) resulting from a claim under the Performance Security to the extent to which the Employer was not entitled to make the claim.

60. Taxes and Duties

60.1 The Contractor shall be entirely responsible for all kinds of taxes, duties, fees, levies, and such other charges assessed on the Contractor, its Subcontractors or their employees by all municipal, state or national government authorities in connection with the Facilities in and outside of the country where the Site is located.

60.2 Notwithstanding GCC Sub-Clause 60.1 above, the Employer shall bear and promptly pay

(a) all customs and import duties for the Plant specified in Price Schedule No. 1; and

(b) other domestic taxes such as, sales tax and value added tax (VAT) on the Plant specified in Price Schedules No. 1 and No. 2 and that is to be incorporated into the Facilities, and on the finished goods, imposed by the law of the country where the Site is located.

60.3 If any tax exemptions, reductions, allowances or privileges may be available to the Contractor in the country where the Site is located, the Employer shall use its best endeavors to enable the Contractor to benefit from any such tax savings to the maximum allowable extent.

61. Payments to Nominated Subcontractor(s)

61.1 The Contractor shall pay to the Nominated Subcontractor(s) the amounts shown on the Nominated Subcontractor's invoices approved by the Contractor in accordance with the subcontract included under the Contract.

62. Price Adjustment

62.1 Where the Contract Period (excluding the Defects Liability Period) exceeds eighteen (18) months, it is normal procedure that prices payable to the Contractor shall be subject to adjustment during the performance of the Contract to reflect changes occurring in the cost of labour and material components. In such cases the tender

documents shall include in the Appendix 2, a formula of such price adjustment.

62.2 Where Contracts are of a shorter duration than eighteen (18) months or in cases where there is to be no Price Adjustment, the following provision shall not be included. Instead, it shall be indicated under this Appendix 2 that the prices are to remain firm and fixed for the duration of the Contract.

62.3 If the value of the Index is changed after it has been used in a calculation, the calculation shall be corrected and an adjustment made in the next or in the final payment certificate. The Index value shall be deemed to take account of all changes in price due to fluctuations.

63. Liquidated Damages

63.1 The Contractor shall be liable to pay Liquidated Damages or in other words the Delay Damages to the Employer at the rate per day as specified in the PCC for each day of delay from the Intended Completion Date, for the uncompleted delivery of goods/works/services or for any part thereof.

63.2 The total amount of Liquidated Damages shall not exceed the amount defined in the PCC.

63.3 Once the cumulative amount of Liquidated Damages reaches ten (**10**) percent of the Contract price, the Employer may rescind the Contract, without prejudice to other courses of action and remedies open to it.

63.4 The amount of Liquidated Damages may be deducted from any money due or which may become due to the Contractor under the Contract and/or collect such amount of Liquidated Damages from the Retention Money (if any) or other securities posted by the Contractor whichever is convenient to the Employer. In an extreme situation that no such foregoing recourse is available, the contractor be asked to make good the damages from his own finances in writing failing which necessary action as per the provisions of this GCC or PCC be taken.

63.5 Payment of Liquidated Damages by the Contractor shall not relieve the Contractor from its obligations.

63.6 If the Intended Completion Date is extended after Liquidated Damages have been paid, the Engineer shall correct any overpayment of Liquidated Damages by the Contractor by adjusting the next payment certificate.

G. Change in Contract Elements

64. Change in the Facilities

64.1 **Introducing a Change**

64.1.1 Subject to GCC Sub-Clauses 64.2.5 and 64.2.7, the Employer shall have the right to propose, and subsequently require, that the Project Manager order the Contractor from time to time during the performance of the Contract to make any change, modification, addition or deletion to, in or from the Facilities hereinafter called “Change”, provided that such Change falls within the general scope of the Facilities and does not constitute unrelated work and that it is technically practicable, taking into account both the state of advancement of the Facilities and the technical compatibility of the Change envisaged with the nature of

the Facilities as specified in the Contract

64.1.2 The Contractor may from time to time during its performance of the Contract propose to the Employer with a copy to the Project Manager, any Change that the Contractor considers necessary or desirable to improve the quality, efficiency or safety of the Facilities. The Employer may at its discretion approve or reject any Change proposed by the Contractor, provided that the Employer shall approve any Change proposed by the Contractor to ensure the safety of the Facilities.

64.1.3 Notwithstanding GCC Sub-Clauses 64.1.1 and 64.1.2, no change made necessary because of any default of the Contractor in the performance of its obligations under the Contract shall be deemed to be a Change, and such change shall not result in any adjustment of the Contract Price or the Time for Completion.

64.1.4 The procedure on how to proceed with and execute Changes is specified in GCC Sub-Clauses 64.2 and 64.3, and further details and forms are provided in the Employer's Requirements (Forms and Procedures).

64.2 **Changes Originating from Employer**

64.2.1 If the Employer proposes a Change pursuant to GCC Sub-Clause 64.1.1, it shall send to the Contractor a "Request for Change Proposal," requiring the Contractor to prepare and furnish to the Project Manager as soon as reasonably practicable a "Change Proposal," which shall include the following:

(a) brief description of the Change

(b) effect on the Time for Completion

(c) estimated cost of the Change

(d) effect on Functional Guarantees (if any)

(e) effect on the Facilities

(f) effect on any other provisions of the Contract.

64.2.2 Prior to preparing and submitting the "Change Proposal," the Contractor shall submit to the Project Manager an "Estimate for Change Proposal," which shall be an estimate of the cost of preparing and submitting the Change Proposal.

Upon receipt of the Contractor's Estimate for Change Proposal, the Employer shall do one of the following:

(a) accept the Contractor's estimate with instructions to the Contractor to proceed with the preparation of the Change Proposal

(b) advise the Contractor of any part of its Estimate for Change Proposal that is unacceptable and request the Contractor to review its estimate

(c) advise the Contractor that the Employer does not intend to proceed with the Change.

64.2.3 Upon receipt of the Employer's instruction to proceed under

GCC Sub-Clause 64.2.2 (a), the Contractor shall, with proper expedition, proceed with the preparation of the Change Proposal, in accordance with GCC Sub-Clause 64.2.1.

64.2.4 The pricing of any Change shall, as far as practicable, be calculated in accordance with the rates and prices included in the Contract. If such rates and prices are inequitable, the Parties thereto shall agree on specific rates for the valuation of the Change

.64.2.5 If before or during the preparation of the Change Proposal it becomes apparent that the aggregate effect of compliance therewith and with all other Change Orders that have already become binding upon the Contractor under this GCC Clause 64 would be to increase or decrease the Contract Price as originally set forth in Article 2 (Contract Price) of the Contract Agreement by more than fifteen percent (15%), the Contractor may give a written notice of objection thereto prior to furnishing the Change Proposal as aforesaid. If the Employer accepts the Contractor's objection, the Employer shall withdraw the proposed Change and shall notify the Contractor in writing thereof.

The Contractor's failure to so object shall neither affect its right to object to any subsequent requested Changes or Change Orders herein, nor affect its right to take into account, when making such subsequent objection, the percentage increase or decrease in the Contract Price that any Change not objected to by the Contractor represents.

64.2.6 Upon receipt of the Change Proposal, the Employer and the Contractor shall mutually agree upon all matters therein contained. Within fourteen (14) days after such agreement, the Employer shall, if it intends to proceed with the Change, issue the Contractor with a Change Order.

If the Employer is unable to reach a decision within fourteen (14) days, it shall notify the Contractor with details of when the Contractor can expect a decision.

If the Employer decides not to proceed with the Change for whatever reason, it shall, within the said period of fourteen (14) days, notify the Contractor accordingly. Under such circumstances, the Contractor shall be entitled to reimbursement of all costs reasonably incurred by it in the preparation of the Change Proposal, provided that these do not exceed the amount given by the Contractor in its Estimate for Change Proposal submitted in accordance with GCC Sub-Clause 64.2.2.

64.2.7 If the Employer and the Contractor cannot reach agreement on the price for the Change, an equitable adjustment to the Time for Completion, or any other matters identified in the Change Proposal, the Employer may nevertheless instruct the Contractor to proceed with the Change by issue of a "Pending Agreement Change Order."

Upon receipt of a Pending Agreement Change Order, the Contractor shall immediately proceed with effecting the Changes covered by such Order. The Parties shall thereafter attempt to reach agreement on the outstanding issues under the Change Proposal.

64.3 **Changes Originating from Contractor**

64.3.1 If the Contractor proposes a Change pursuant to GCC Sub-Clause 64.1.2, the Contractor shall submit to the Project Manager a written "Application for Change Proposal," giving reasons for the proposed Change and including the information specified in GCC Sub-Clause 64.2.1.
Upon receipt of the Application for Change Proposal, the Parties shall follow the procedures outlined in GCC Sub-Clauses 64.2.6 and

64.3.2. However, should the Employer choose not to proceed, the Contractor shall not be entitled to recover the costs of preparing the Application for Change Proposal.

65. Extension of Time for Completion

65.1 The Time(s) for Completion specified in the PCC pursuant to GCC Sub-Clause 8.2 shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:

(a) any Change in the Facilities as provided in GCC Clause 64

(b) any occurrence of Force Majeure as provided in GCC Clause 52, unforeseen conditions as provided in GCC Clause 50, or other occurrence of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC Sub-Clause 47.2

(c) any suspension order given by the Employer under GCC Clause 41 hereof or reduction in the rate of progress pursuant to GCC Sub-Clause 66.2 or

(d) any changes in laws and regulations as provided in GCC Clause 51 or

(e) any default or breach of the Contract by the Employer, Appendix to the Contract Agreement titled ,or any activity, act or omission of the Employer, or the Project Manager, or any other contractors employed by the Employer, or

(f) any delay on the part of a sub-contractor, provided such delay is due to a cause for which the Contractor himself would have been entitled to an extension of time under this sub-clause, or

(g) delays attributable to the Employer or caused by customs, or

(h) any other matter specifically mentioned in the Contract

by such period as shall be fair and reasonable in all the circumstances and as shall fairly reflect the delay or impediment sustained by the Contractor.

65.2 Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Project Manager a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Employer and the Contractor shall agree upon the period of such extension. The Contractor shall at all times use its reasonable efforts to minimize any delay in the performance of its obligations under the Contract.

In all cases where the Contractor has given a notice of a claim for an extension of time under GCC 65.2, the Contractor shall consult with the Project Manager in order to determine the steps (if any) which can be taken to overcome or minimize the actual or anticipated delay. The Contractor shall there after comply with all reasonable instructions which the Project Manager shall give in order to minimize such delay. If compliance with such instructions shall cause the Contractor to incur extra costs and the Contractor is entitled to an extension of time under GCC 65.1, the amount of such extra costs shall be added to the Contract Price.

66. Suspension

66.1 The Employer may request the Project Manager, by notice to the Contractor, to order the Contractor to suspend performance of any or all of its obligations under the Contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and the reasons thereof. The Contractor shall thereupon suspend performance of such obligation, except those obligations necessary for the care or preservation of the Facilities, until ordered in writing to resume such performance by the Project Manager..

If, by virtue of a suspension order given by the Project Manager, other than by reason of the Contractor's default or breach of the Contract, the Contractor's performance of any of its obligations is suspended for an aggregate period of more than ninety (90) days, then at any time thereafter and provided that at that time such performance is still suspended, the Contractor may give a notice to the Project Manager requiring that the Employer shall, within twenty-eight (28) days of receipt of the notice, order the resumption of such performance or request and subsequently order a change in accordance with GCC Clause 64, excluding the performance of the suspended obligations from the Contract.

If the Employer fails to do so within such period, the Contractor may, by a further notice to the Project Manager, elect to treat the suspension, where it affects a part only of the Facilities, as a deletion of such part in accordance with GCC Clause 64 or, where it affects the whole of the Facilities, as termination of the Contract under GCC Sub-Clause 66.1.

66.2 **if**

(a) the Employer has failed to pay the Contractor any sum due under the Contract within the specified period, has failed to approve any invoice or supporting documents without just cause pursuant to the Appendix to the Contract Agreement titled Terms and Procedures of Payment, or commits a substantial breach of the Contract, the Contractor may give a notice to the Employer that requires payment of such sum, with interest thereon as stipulated in GCC Sub-Clause 57.3, requires approval of such invoice or supporting documents, or specifies the breach and requires the Employer to remedy the same, as the case may be. If the Employer fails to pay such sum together with such interest, fails to approve such invoice or supporting documents or give its reasons for withholding such approval, or fails to remedy the breach or take steps to remedy the breach within fourteen (14) days after receipt of the Contractor's notice or

(b) the Contractor is unable to carry out any of its obligations under the Contract for any reason attributable to the Employer, including but not limited to the Employer's failure to provide possession of or access to the Site or other areas in accordance with GCC Sub-Clause 25.2, or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities,

then the Contractor may by fourteen (14) days' notice to the Employer suspend performance of all or any of its obligations under the Contract, or reduce the rate of progress.

66.3 If the Contractor's performance of its obligations is suspended or the rate of progress is reduced pursuant to this GCC Clause 66, then the Time for Completion shall be extended in accordance with GCC Sub-Clause 40.1, and any and all additional costs or expenses incurred by the Contractor as a result of such suspension or reduction shall be paid by the Employer to the Contractor in addition to the Contract Price, except in the case of suspension order or reduction in the rate of progress by reason of the Contractor's default or breach of the Contract.

66.4 During the period of suspension, the Contractor shall not remove from the Site any Plant, any part of the Facilities or any Contractor's Equipment, without the prior written consent of the Employer.

H. Termination and Settlement of Disputes

67. Termination

67.1 **<u>Termination for Default</u>**

(a) The Employer or the Contractor, without prejudice to any other remedy for breach of Contract, by giving twenty eight (28) days written notice of default to the other party, may terminate the Contract in whole or in part if the other party causes a fundamental breach of Contract.

(b) Fundamental breaches of the Contract shall include, but shall not be limited to, the following:

(i) the Contractor stops work for twenty-eight (28) days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer;

(ii) the Engineer instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within twenty-eight (28) days;

(iii) the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;

(iv) the Engineer gives Notice that the failure to achieve the progress in accordance with the updated Programme of Works by the Contractor is a non-fulfilment of contractual obligations and the Contractor fails to restore it within a reasonable period of time instructed by the Engineer;

(v) the Contractor does not maintain a Security, which is required;

(vi) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of Liquidated Damages can be paid, as specified in GCC Sub Clause 41.2;

(vii) the Contractor has subcontracted the whole of the Works or has assigned the Contract without the required agreement and without the approval of the Engineer;

(viii) the Contractor, in the judgment of the Employer has engaged in practices, as defined in GCC Sub Clause 39, in competing for or in executing the Contract.

(c) A payment certified by the Engineer is not paid by the Employer to the Contractor within twenty eight (28) days of the date of the Engineer's certificate.

67.2 **Termination for Insolvency**

The Employer and the Contractor may at any time terminate the Contract by giving twenty eight (28) days written notice to the other party if either of the party becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to any party, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the other party.

67.3 **Termination for Convenience**

(a) The Employer, by giving twenty eight (28) days written notice sent to the Contractor, 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 Employer's convenience, the extent to which performance of the Contractor under the Contract is terminated, and the date upon which such termination becomes effective. The termination shall take effect twenty eight (28) days after the later dates on which the Contractor receives this notice or the Employer returns the Performance Security.

(b) The Employer shall not terminate the contract under GCC

Sub Clause 67.1 (a) in order to execute the contract itself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor as stated under GCC Sub Clause 67.1(a).

67.4 In the event the Employer terminates the Contract in whole or in part, the Employer shall accept the portion of the Works that are complete and ready for handing over after the Contractor's receipt of notice of termination of the Contract. For the remaining portion of the Works, the Employer may elect:

(a) to have any portion completed by the Contractor at the Contract terms and prices; and /or

(b) to cancel the remainder and pay to the Contractor an agreed amount for partially completed Works and for materials and parts previously procured by the Contractor, or

(c) except in the case of termination for convenience as stated under GCC Sub Clause 67, engage another Contractor to complete the Works, and in that case the Contractor shall be liable to the Employer for any cost that may be incurred in excess of the sum that would have been paid to the Contractor, if the work would have been executed and completed by him or her.

67.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as is reasonably possible

68. Payment upon Termination

68.1 If the Contract is terminated because of a fundamental breach of Contract under GCC Sub Clause 67.1 by the Contractor, the Project Manager shall issue a certificate for the value of the Works done and Plant and Materials ordered less advance payments received up to the date of the issue of the certificate and less the amount from percentage to apply to the contract value of the works not completed, as indicated in the PCC. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.

68.2 If the Contract is terminated for the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Project Manager shall issue a payment certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's foreign personnel employed solely on the Works and recruited specifically for the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

68.3 If the Contract is terminated for reasons of Force Majeure, the The Project Manager shall determine the value of the work done and issue a Payment Certificate which shall include.

(a) the amounts payable for any work carried out for which unit rates or prices are stated in the Contract;

(b) the cost of Plant and Materials ordered for the Works which have been delivered to the Contractor, or of which the Contractor is liable to accept delivery: this Plant and

Materials shall become the property of (and be at the risk of) the Employer when paid for by the Employer, and the Contractor shall place the same at the Employer's disposal;

(c) other costs or liabilities which in the circumstances were reasonably and necessarily incurred by the Contractor in the expectation of completing the Works;

(d) the cost of removal of Temporary Works and Contractor's Equipment from the Site; and

(e) the cost of repatriation of the Contractor's staff and labor employed wholly in connection with the Works at the date of termination.

69. Property

69.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer if the Contract is terminated because of the Contractor's default stated under GCC Sub Clause 67.1.

70. Frustration

70.1 If the Contract is frustrated by the occurrence of a situation of Force Majeure as defined in GCC Sub Clause 52, the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all works carried out before receiving it and for any work carried out afterwards to which a commitment was made.

I. Claims, Disputes and Arbitration

71. Contractor's Claims

71.1 If the Contractor considers himself to be entitled to any extension of the Completion Time and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give notice to the Employer, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than twenty eight (28) days after the Contractor became aware, or should have become aware, of the event or circumstance.

71.2 If the Contractor fails to give notice of a claim within such period of twenty eight (28) days, the Intended Completion Date shall not be extended, the Contractor shall not be entitled to additional payment, and the Employer shall be discharged from all liability in connection with the claim.

71.3 Within forty two (42) days after the Contractor became aware or should have become aware of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Engineer, the Contractor shall send to the Engineer a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed, for settlement.

72. Settlement of Disputes

Amicable settlement

72.1 The Employer and the Contractor shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

Arbitration

72.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation as stated under GCC Clause 72.1, then either the Employer or the Contractor may give notice to the other party of its intention to commence arbitration in accordance with GCC Sub Clause 72.3, 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.

72.3 Arbitration shall be commenced prior to or after execution of the Works under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure specified in the PCC.

72.4 Notwithstanding any reference to arbitration hereinabove the parties shall continue to perform their respective responsibilities under the Contract unless agreed otherwise and, the Employer shall pay any monies due to the Contractor.

Section 4. Particular Conditions of Contract

Instructions for completing the Particular Conditions of Contract are provided in italics in parenthesis for the relevant GCC Clauses.	
GCC Clause	**Amendments of, and Supplements to, Clauses in the General Conditions of Contract**
GCC 1.1(j)	The Contractor is *[Name, address, and name of authorized representative]*
GCC 1.1(ll)	**The Procuring Entity/Employer/Purchaser/Project Manager/Consignee is:** Northern Electricity Supply Company Limited **Representative:** Superintending Engineer (Procurement), NESCO Ltd., Bidyut Bhaban, Hetem khan, Rajshahi, Bangladesh. Telephone: +88-0721-774900. e-mail: se.procurement@nesco.gov.bd Supplier: Also means Contractor Provisional Acceptance Certificate (PAC): Also means Operational Acceptance Certificate (OAC).
GCC 1.1(oo)	The Site is located at: BSCIC Industrial Park, Sirajganj
GCC 1.1(t)	"Effective Date" shall mean the date of signing the Contract.
GCC 3.1	The Procuring Entity's address for the purpose of communications under this contract is : Superintending Engineer (Procurement), NESCO Ltd., Bidyut Bhaban, Hetem khan, Rajshahi, Bangladesh. Telephone: +88-0721-774900. e-mail: se.procurement@nesco.gov.bd
	The Contractor's address for the purpose of communications under this contract is : Contact person: Address: Tel: Fax: e-mail address:
GCC 6.1 (k)	Other documents forming part of the Contract are; Acceptance of NOA, Performance Security, Tender/Proposal (Offer) of the Contractor and All Correspondences between purchaser and Contractor prior to signing of the contract.
GCC 9.2	**Materials, Equipment Plants and supplies shall not have their origin in the following countries:**

	Israel. Plant and services from a country which is not included in the specified countries mentioned in the respected GTP in Section 8: Guaranteed Technical Particulars is also not acceptable.
GCC 13.1	Possession of the Site or part(s) of the Site, to the Contractor will be given on the following date(s): Within 14 days of contract signing (Subject to the permission of BSCIC Authority).
GCC 22.3	**The Contractor agrees to supply spare parts for a period of [insert years]** **Addition to** PCC**22.3** The Contractor shall carry sufficient inventories to ensure an ex-stock supply of **consumable spares** for the Plant. Other spare parts and components shall be supplied as promptly as possible, but at the most within six (6) months of contract signing. In addition, in the event of termination of the production of spare parts, advance notification will be made to the Employer of the pending termination, with sufficient time to permit the Employer to procure the needed requirement. Following such termination, the Contractor will furnish to the extent possible and at no cost to the Employer the blueprints, drawings and specifications of the spare parts, if requested.
GCC 23.1	Replace Clause as follows: The Contractor shall commence work on the Facilities within **14 (Fourteen) days** from the "Effective Date" and without prejudice to GCC Sub-clause 41.2 hereof, the Contractor shall thereafter proceed with Facilities in accordance with the Time schedule specified in the Appendix 4 (Time Schedule) to the Contract Agreement.
GCC 24.1	The time for completion of the whole of the facilities shall be: **365 (Three hundred and Sixty-Five) days** calculated from the Effective Date of Contract to acceptance of Commissioning and Guarantee test run.
GCC 32.1	A Subcontractor that is a national of, or registered in, the following countries are not eligible: Israel
GCC 33.1	Nominated Subcontractor(s) named below: Not Applicable
GCC38.2	**Testing, Training & Inspection:** **(A) Inspection, Testing of the Equipment (Pre-Shipment Inspection):** Inspection & testing of different substation equipment at manufactures premises will be conducted by the NESCO Engineers according to **section 5/6/7/8** of this tender document. Total five (05) inspection groups each consisting of three (03) NESCO Engineers will conduct the pre-shipment inspection (Technical Orientation and Quality Test Witness at the manufacturer's factory premises) of the equipment as mentioned section 5/6/7/8. PE reserves the right to revise the clusters of these five (05) equipment groups for Inspection depending on the country of origin of the goods. The Contractor shall bear the round air tickets, hotel accommodations, per diem allowances, internal transportations and out of pocket expenses @ US$ 150.00 per person per day for 7 (Seven) days (excluding travel time) for such inspections. No goods shall be packed, prepared for shipment/delivery unless the inspection (PSI) report has been approved and written instruction has been issued by the Purchaser.

	(B) Training inside Bangladesh: Technical Orientation & witness of the Plant & Equipment (for each sub-station) for 03 (three) days after Commissioning of the Plant & Equipment at Project Site's and/or in classroom including transfer of technical know-how: During Technical Orientation & witness, transfer of Technology and Technical know-how regarding spares, parameters and testing & manufacturing procedure including familiarization/ testing of equipment to NESCO Engineers/Employer (persons) at on Project's Site and/or in Classroom is to be performed by the expertise of the Plant & Equipment Manufacturer's. The Contractor/Supplier shall bear all costs required for accommodations, classroom rent, foods, internal transportations to carry out the Technical Orientation & witness by the NESCO Engineers'/Employer (persons) for 3 (three) days (excluding any travel time). Such Orientation & witness will be required for issuing Operational Acceptance Certificate (OAC) and shall not relieve the supplier from any obligation to supply the goods in accordance with contract document. **The Contractor shall bear all costs regarding all testing, training and inspection.**
GCC 40.1.2	**Replace the Clause as follows:** Before commissioning, the Employer will provide operating and maintenance personnel under Contractor's supervision to get them (Employer's O&M personal) acquainted with and to witness the commissioning of the Plant & Equipment. All raw materials, utilities, lubricants, chemicals, catalysts, facilities, services and other matters required for Commissioning shall be supplied by the Contractor.
GCC 40.2.2	If for reasons not attributable to the Contractor, the Guarantee Test of the Facilities or the relevant part thereof cannot be successfully completed within the period 30 (thirty) days from the date of successfully completion of commissioning, Operational Acceptance Certificate (OAC) / PAC may be issued subjected to GCC Sub-Clause 40.3.1 hereof. But Contractor shall have to perform Guarantee Test as soon as Employer request for the same.
GCC40.3.1 **(Missing Clause)**	Subjected to GCC Sub-Clause 40.4 below, Operational Acceptance shall occur in respect of Facilities or any part thereof when a. the Guarantee Test has been successfully completed and the Functional Guarantee are met; or b. the Guarantee Test has not been successfully completed or has not been carried out for reasons not attributable to the Contractor within the period from the date of Completion or any other agreed upon period as specified in GCC Sub-Clause 40.2.2 or c. the Contractor has paid the liquidated damages specified in GCC Sub-clause 43.3 for Functional Guarantee hereof; and d. any minor items mentioned in GCC Sub-Clause 39.9 hereof relevant to the Facilities or that part thereof have been completed; and e. successfully carry out the Technical Orientation and Quality Test Witness of Plant & Equipment and any part of the Facilities specified hereof;
GCC 40.4	Partial Acceptance of Plant and Facilities are allowed on the basis of successful completion of commissioning and Guarantee Test of a particular Sub-station.

GCC 41.2	Liquidated Damages: At the rate of zero-point one percent (0.1%) price of the particular Substation(s) per day. The maximum amount of Liquidated Damages is: Ten percent (10%) of the final Contract price.
GCC 41.3	No bonus will be given for earlier Completion of the Facilities or part thereof.
GCC42.2	Replace the first Paragraph of clause 42.2 as follows: The warranty/defect liability period hereunder shall begin from the date of issuance of Operational Acceptance Certificate (OAC)/ Provisional Acceptance Certificate (PAC) for a particular Sub-Station by NESCO and shall end after **18 (Eighteen) months** pursuant to GCC Sub-Clause 42.10.
GCC 42.3	The amount to be withheld for late submission of an updated Programme is Not Applicable.
GCC 42.9	"After Completion of the Facilities or any part thereof," will be replaced by "after Operational Acceptance of Facilities,"
GCC 42.10	During the Defect Liability Period, if any Plant & Equipment is damaged and replaced by the Contractor, fresh Defect Liability Period for 18 (Eighteen) months of operation shall be counted for replaced Plant & Equipment from the date of repair, replacement, commissioning thereof.
GCC 42.11 **(New Clause)**	Final Acceptance Certificate (FAC): The "Final Acceptance Certificate (FAC)" shall mean the official notification by Employer to the Contractor, issued at the end of all the Defect Liability Period (if different guarantee periods to different parts of the work, after the expiration of the latest of such periods) which indicates that the Contractor has completed his obligation under the Contract.
GCC 45.1 (b)	The multiplier of the Contract Price is: One (1).
GCC47.1	"until the date of Completion of the Facilities pursuant to GCC Clause 39 or, where the Contract provides for Completion of the Facilities in parts, until the date of Completion of the relevant part" will be replaced by "until the date of Operational Acceptance of the Facilities pursuant to GCC Clause 40.3 or, where the Contract provides for Completion of the Facilities in parts, until the date of Operational Acceptance of the relevant part"
GCC 56.2	The Contract Price shall be adjusted in accordance with the provisions of the Appendix to the Contract Agreement titled Adjustment Clause. **Not Applicable**
GCC57.1	As per Appendix-1. **Terms and procedures of Payment.**
GCC 57.5 **(New Clause)**	Payments due to the Contractor in each certificate shall be made into the following Bank Account nominated by the Contractor and in the currency as specified in the Payment Schedule: The particulars of the Bank Account nominated are as follows : Title of the Account: [insert title to whom the Contract awarded] Name of the Bank : [insert name with code, if any] Name of the Branch : [insert branch name with code ,if any]

	Account Number : [insert number] Address : [insert location with district] Tel: Fax: e-mail address:
GCC59.1	The Contractor shall, within twenty-eight (28) days of the notification of contract award (NOA), provide a security for the due performance of the Contract in the amount, as a percentage of the Contract Price for the Facility or for the part of the Facility for which a separate Time for Completion is provided, shall be: Ten percent (10%).
GCC59.2	The performance security shall be provided in the currency or currencies of the Contract as stated under ITT Sub Clauses 27.4 at the percentage as specified in GCC 59.1 and shall be in the form of an irrevocable Bank Guarantee in the Format (Form PG5A-9) provided in Section 5, Tender and Contract Forms, acceptable to the Employer.
GCC59.3	Performance Security shall not be reduced. The performance security shall be valid until completion of Defects Liability Period plus 28 (twenty-eight) days, provided, however, that if the Defects Liability Period has been extended on any part of the Facilities pursuant to GCC Sub-Clause 42.8 hereof, the Contractor shall issue an additional security in an amount proportionate to the Contract Price of that part.
GCC 60.4 (New Clause)	**NESCO shall pay only the CD/VAT assessed by the Customs Authority for Schedule-1 (Plant and Equipment Supplied from Abroad).** **The Contractor shall be entirely responsible for all other kinds of taxes, duties, fees, levies, and such other charges. The Employer shall not bear any such cost.** **This clause shall prevail in case of any contradiction with any other term of the tender document.**
GCC 63.1	The amount of Liquidated Damages: As in **GCC 41.2**
GCC63.2	The maximum amount of Liquidated Damages is: Ten percent (10%) of the final Contract price.
GCC72.3	As per Bangladesh Arbitration Act. Place: Dhaka, Bangladesh.
GCC 73.1 List Delivery Document (New Clause)	Upon delivery of the Goods to the transporter, the Supplier shall notify the Employer/Consignee and send the following documents to the Employer/Consignee: (a) Sufficient copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount; (b) Sufficient copies delivery note, railway receipt, or truck receipt; (c) Sufficient copies Manufacturer's or Supplier's warranty certificate; (d) Sufficient copies inspection certificate issued by the nominated inspection agency, and the Supplier's factory inspection report; and (e) Sufficient copies certificate of origin.

	The Employer/Consignee, shall receive the above documents before the arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.
GCC 74.1 (New Clause)	SUBMISSION OF "as-built" Drawing of the Plant: The Contractor shall submit "as-built" drawing including Approval/ Testing Report/ Operational/ Maintenance Manual within one month from the date of Completion Certificate to the PE. All documents including Drawing/ Testing Report/ Operational/ Maintenance Manual must be submitted in English language. If the Contractor does not supply the Drawings and Manuals by the dates specified above or they do not receive any commands/suggestions given by the of Design & Inspection, Department, NESCO, Operational Acceptance Certificates (OAC) or FAC shall not be issued until the submission of "as-built" drawings and/or operating and maintenance manuals.
GCC 75.1 **(New Clause)**	CLEAN UP OF SITE: The Contractor shall clean the working areas periodically of all trash and waste materials and shall maintain the Site in a neat and orderly condition throughout the construction period. The Engineer shall have the right to determine what is waste material or rubbish and the manner and place of disposal. On or before the completion of the Work the Contractor shall, without charge there for, carefully clean out all pits, pipes, chambers or conduits, and shall tear down and remove all temporary structures built by him, and shall remove all rubbish of every kind from the tracts or grounds which he has occupied and shall leave them in first class condition. In the event that the Contractor fails to comply with the cleanliness requirement or to perform the clean-up work assigned to him by NESCO. NESCO will reserve the right to hire labourers to perform the necessary cleaning work and the Contractor shall bear all the cost regarding such clean-up work.
GCC77.1 (New Clause)	Release of Liability: The acceptance by the Contractor of the last payment shall operate as, and shall be, a release to the NESCO and every officer, agent and employee thereof, from all claims and liability hereunder for anything done or furnished for or relating to the work, or for any act or neglect of the NESCO or of any person relating to or the affecting the work. The last payment by the NESCO to the Contractor shall constitute final acceptance of all work performed under this Contract and shall release the Contractor and his surety, from all Contractual liabilities and responsibilities to the NESCO except these liabilities assumed under the Defect Liability period/ Warranty period/Functional Guarantees clause PCC [GCC 42] of these Special Conditions or arising out of hidden defects. In the event a suit was to be instituted in Bangladesh against the NESCO and the Contractor as defendants neither shall be released from his respective liabilities under this Contract.

Appendix to the Tender

[In Tables below, the Procuring Entity shall indicate the source and base values with dates of Indexes, unless otherwise instructed to be quoted by the Tenderer, for the different Cost Components and mention its Weightings or Coefficients]

Table 1.1: Price Adjustment Data

[ITT Sub Clause 26.9: To be provided by the Procuring Entity]

Index Descriptions	Base Value	Sources of Index

Note:

1. **The sources of Indexes and its values with dates shall be Bangladesh Bureau of Statistics (BBS) unless otherwise mentioned by the Procuring Entity or instructed to be quoted by the Tenderer.**
2. **The Procuring Entity may require the Tenderer to justify its proposed Indexes, if quoted by the Tenderer.**
3. **The Base Value of the Indexes shall be those prevailing twenty eight (28) days prior to the deadline for submission of the Tenders.**

Table 1.2: Price Adjustment Data

[GCC Sub Clause 56.4: To be provided by the Procuring Entity]

Item Group	Bill No. if applicable	Index Descriptions	Coefficients or Weightings for non-adjustable Cost Component	Coefficients or Weightings for adjustable Cost Components										Total
				a	b	c	d	e	f	g	h	i	j	
														1
														1
														1
														1
														1
														1

Note:

The Weightings or Coefficients of the Cost Components shall be mentioned by the Procuring Entity based on the proportion of components involved in the items caused to be impacted by rise and fall in its prices.

APPENDICES [This appendixes shall be the part of the contract]

Appendix 1 - Terms and Procedures of Payment
Appendix 2 - Price Adjustment
Appendix 3 - Insurance Requirements
Appendix 4 - Time Schedule
Appendix 5 - List of Major Items of Plant and services and List of Approved Subcontractors
Appendix 6 - Scope of Works and Supply by the Employer
Appendix 7 - List of Documents for Approval or Review
Appendix 8 - Functional Guarantees

Appendix 1. Terms and Procedures of Payment

In accordance with the provisions of GCC Clause 57 (Terms of Payment), the Employer shall pay the Contractor in the following manner and at the following times, on the basis of the Price Breakdown given in the section on Price Schedules. Payments will be made in the currencies quoted by the Tenderer unless otherwise agreed between the parties. Applications for payment in respect of part deliveries may be made by the Contractor as work proceeds.

(A) Terms of Payment

Schedule No. 1 - Plant and Equipment Supplied from Abroad
In respect of plant and equipment supplied from abroad, the following payments shall be made:

i) **Advance Payment: N/A**

ii) **On Shipment:** Sixty percent (60%) of the total or pro rata CIP amount at sight according to Incoterm "CIP," upon delivery to carrier shall be paid through letter of credit opened in favour of the contractor/supplier in a bank in its country upon submission of documents specified in **PCC clause 73.1** with invoices duly certified and approved by the PE.

iii) **On Acceptance of PLI Report:** Ten percent (10%) of the total or pro rata CIP amount upon issuance of the Post Landing Inspection report as specified in PCC 38.2 for each consignment delivered at site and a claim bill duly certified and approved by the PE.

iv) **On Operational Acceptance Certificate/PAC:** Thirty percent (30%) of the total or pro rata CIP amount upon issue of the Operational Acceptance Certificate (OAC) as specified in GCC 40.3 and a claim bill duly certified and approved by the PE.

Schedule No. 2 - Plant and Equipment Supplied from within the Employer's Country
In respect of plant and equipment supplied from within the Employer's country, the following payments shall be made:

i. **Advance Payment:** N/A

ii. **On Delivery and PLI Report: Seventy percent (70%)** of the total or pro rata EXW amount upon Incoterm "Ex-Works," upon delivery to the designated site and upon issue of the Post Landing Inspection report as specified in PCC 38.2 for each consignment delivered at site and submission of documents specified in **PCC clause 73.1** with a claim bill duly certified and approved by the PE.

iii. **On Operational Acceptance Certificate /PAC:** Thirty percent (30%) of the total or pro rata EXW amount upon issue of the Operational Acceptance Certificate (OAC) as specified in GCC 40.3 and a claim bill duly certified and approved by the PE.

Note: In case of foreign currency, the payment procedure of Schedule-1 will be followed.

Schedule No. 3 - Civil Works

i. **Advance Payment: Not Applicable**

iv. **On Progress Report: Seventy percent (70%)** of the measured value of work performed satisfactorily by the Contractor, as identified in the said Program of Performance or in Contractors' breakdown estimate, will be made progressively after receipt of invoice/claim bill duly certified and approved by the PE.

v. **On Operational Acceptance Certificate /PAC:** Thirty percent (30%) of the total or pro rata value of work performed satisfactorily by the Contractor as identified in the said Program of Performance or in Contractors' breakdown estimate, upon issuance of the Operational Acceptance Certificate (OAC) as specified in GCC40.3, will be made after receipt of invoice/claim bill duly certified and approved by the PE.

Note 1: The Payment-delay period after which the Purchaser shall pay interest to the Contractor/Supplier shall not be allowed. No interest will be applicable for delayed payment.

Note 2: The function of C& F agent and Insurance (both foreign and local) shall have to be completed by the tenderer. The cost regarding C & F agent and Insurance shall have to be included in the price schedule.

(B) Payment Procedures

The procedures to be followed in applying for certification and making payments shall be as follows:

Payments under this Contract shall be effective in the currency of the Tender for Foreign Currency and in Taka for local currency.

1 **Local Currency [BDT]**

Payment of Local currency portion (where applicable) shall be made direct through transfer of fund to Contractor's account or through cheque. Payment shall be made direct from NESCO.

2 **Foreign Currency**

Payment of foreign currency portion shall be made through Letter of Credit (L/C) opened in favour of the contractor/supplier in a schedule Bank of Bangladesh.

BANKING CHARGES:

- Letter of Credit opening and other charges including amendment charges within Bangladesh shall be borne by NESCO and those outside Bangladesh shall be borne by the contractor/supplier.
- The supplier shall have to bear all such charges both inside and outside Bangladesh in case of extension of L/C if done at the request of the contractor/ supplier.

3 **Invoices**

The Contractor shall submit invoices (original) in triplicate to the Project Manager whenever an invoice is required to be submitted as per provision of this Contract. Invoices should be duly certified by Project manager.

4 **Documentation Required for Payment**

Submission of delivery documents as stated under Clause GCC 73.1

(C) Payment Procedure for monthly Progress Report against Civil, & Line work:

On or about the first day of each month the Contractor will prepare a bill in prescribed form of the value (As per Breakdown estimate submitted by Contractor) for the Civil, & Line work done up-to such date. The estimated cost of Civil, & Line work which, do not conform to the specifications will be deducted from the billed amount. Payment will be made to the Contractor as stipulated above. Such intermediate payment shall be regarded as payment by way of advance against the final payment for work actually done and shall not preclude the requiring of bad, unsound and imperfect work to be removed and reconstructed. Such payments shall not be considered as admission that the Contract performance has been completed nor shall it indicate the accruing or

any claim, or shall it conclude, determine or affect in any way the powers of NESCO under this Contract to final settlement and adjustment of the account or in any other way vary or affect the Contract.

Contractor's Breakdown Estimate

The Contractor shall prepare and submit to the Consignee for approval a breakdown estimate for and covering each lump-sum price stated in the Contract. The breakdown estimate, showing the value of each kind of work/service shall be certified and approved by before any partial payment estimate is prepared. Such items as bond premium, temporary facilities and plant may be listed separately in the breakdown estimate, provided that their cost can be substantiated.

The sum of the items listed in any breakdown estimate shall equal the Contract lump-sum price or prices, overhead and profit shall not be listed as separate items.

Documentation for progress payments shall be supported by the following documents:

(a) One counterpart of a Work Progress Certificate signed by the Contractor and jointly countersigned by the Owner's Engineer and the Project Manager.

(b) The Contractor shall submit all Work Progress Certificates to both the Owner's Engineer and the Project Manager simultaneously by registered air mail. The Owner's Engineer and the Project Manager will either countersign or reject a Work Progress Certificate within a maximum period of thirty (30) days from the date of receipt of such Certificate by him. If the Owner's Engineer and the Project Manager or either shall fail either to countersign or to reject a Work progress Certificate within the said thirty (30) days period, the Contractor shall notify the Project Manager by cable of the delay in the approval from the Site; and the Project Manager will either countersign the Work Progress Certificate in question or assign his reasons for not doing so within a maximum period of sixty (60) days from the date of receipt of the Contractor's said cable notice to him.

(c) The Contractor shall furnish to the Project Manager and the Owner's Engineer or either whenever called upon to do so any additional information or documents that may be required in connection with verification of progress claims and or any other payments made.

Appendix 2. Price Adjustment (Not Applicable)

Appendix 3. Insurance Requirements

Insurances To Be Taken Out By The Contractor

In accordance with the provisions of GCC Clause 49, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, such approval not to be unreasonably withheld.

The minimum insurance cover shall be 110% (Hundred Ten). The insurance policy would be furnished from Bangladesh Sadharan Bima Corporation.

The Contractor/Supplier shall secure and maintain throughout the duration of the contract insurance of such types and in such amounts as may be necessary to protect himself and the interest of Purchaser against hazards of risk or loss at Supplier's cost. Failure of the Supplier to maintain such coverage shall not relieve him of any contractual responsibility or obligations for transportation and ocean cargo insurance from port of loading to port of unloading and from warehouse to warehouse in Bangladesh.

As Marine/Cargo insurance as well as Local Insurance shall be from Sadharan Bima Corporation, 139, Motijheel Commercial Area, Dhaka, Bangladesh and the cost shall be paid by Supplier/Contractor. Shipment of goods in any chartered vessel over 15(fifteen) years of age and shipment of goods in the Deck are prohibited.

(a) Cargo Insurance

Covering loss or damage occurring, while in transit from the supplier's or manufacturer's works or stores until arrival at the Site, to the Facilities (including spare parts therefore) and to the construction equipment to be provided by the Contractor or its Subcontractors.

Amount [in currency(ies)]	**Deductible limits** [in currency(ies)]	**Parties insured** [names]	**From** [place]	**To** [place]
Hundred Ten Percent (110%) of Contract Price	----------	NESCO	Supplier's or manufacturer's Works or Stores	Contractor's Store in Bangladesh

(b) Installation All Risks Insurance

Covering physical loss or damage to the Facilities at the Site, occurring prior to completion of the Facilities, with an extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the defect liability period while the Contractor is on the Site for the purpose of performing its obligations during the defect liability period.

Amount [in currency(ies)]	**Deductible limits** [in currency(ies)]	**Parties insured** [names]	**From** [place]	**To** [place]
Hundred Ten Percent (110%) of Contract Price	-	NESCO		

(c) Third Party Liability Insurance

Covering bodily injury or death suffered by third parties (including the Employer's personnel) and loss of or damage to property (including the Employer's property and any parts of the Facilities that have been accepted by the Employer) occurring in connection with the supply and installation of the Facilities.

Amount **[in currency(ies)]**	**Deductible limits** **[in currency(ies)]**	**Parties insured** **[names]**	**From** **[place]**	**To** **[place]**
In accordance statutory requirement				

(d) Automobile Liability Insurance

Covering use of all vehicles used by the Contractor or its Subcontractors (whether or not owned by them) in connection with the supply and installation of the Facilities. Comprehensive insurance in accordance with statutory requirements.

(e) Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

(f) Employer's Liability

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

(g) Other Insurances

The Contractor is also required to take out and maintain at its own cost the following insurances:

Details:

Amount **[in currency(ies)]**	**Deductible limits** **[in currency(ies)]**	**Parties insured** **[names]**	**From** **[place]**	**To** **[place]**
Nil	Nil	Nil	Nil	Nil

The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause 49.1, except for the Third-Party Liability, Workers' Compensation and Employer's Liability Insurances, and the Contractor's Subcontractors shall be named as co-insureds under all insurance policies taken out by the Contractor pursuant to GCC Sub-Clause49.1, except for the Cargo, Workers' Compensation and Employer's Liability Insurances. All insurer's rights of subrogation against such co-insureds for losses or claims arising out of the performance of the Contract shall be waived under such policies.

Insurances to be Taken Out By The Employer

The Employer shall at its expense take out and maintain in effect during the performance of the Contract the following insurances.

Details:

Amount **[in currency(ies)]**	**Deductible limits** **[in currency(ies)]**	**Parties insured** **[names]**	**From** **[place]**	**To** **[place]**
Nil	Nil	Nil	Nil	Nil

Appendix 4. Time Schedule

Time(s) for Completion as stated in the PCC24.1.

Except under exceptional circumstances, the Time Schedule should indicate periods of time (e.g., weeks or months) and not specify calendar dates. All periods should be shown from the Signing Date of the Contract.

The Bidder shall be required to submit with its bid a detailed program, normally in the form of a bar chart & CPM, showing how and the order in which it intends to perform the Contract and showing the key events requiring action or decision by the Employer. In preparing this Program, the Bidder shall adhere to the Time(s) for Completion given in the Bid Data Sheet or give its reasons for not adhering thereto. The Time Schedule submitted by the selected Bidder and amended as necessary prior to award of Contract shall be included as Appendix to the Contract Agreement before the Contract is signed.

Appendix 5. List of Major Items of Plant and Services and List of Approved Subcontractors

Prior to issuing the Tender Document, the Employer has established a list of major item of plant and services for which approval of the Employer is required. Prior to award of Contract, the details of approved subcontractor, including manufacturers shall be completed, indicating those subcontractors proposed by the Tenderer in the corresponding Attachment to its tenderthat are approved by the Employer for engagement by the Contractor during the performance of the Contract.

A list of major items of plant and services is provided below.

The following Subcontractors and/or manufacturers are approved for carrying out the item of the facilities indicated. Where more than one Subcontractor is listed, the Contractor is free to choose between them, but it must notify the Employer of its choice in good time prior to appointing any selected Subcontractor. In accordance with GCC Sub-Clause 32.1, the Contractor is free to submit proposals for Subcontractors for additional items from time to time. No Subcontracts shall be placed with any such Subcontractors for additional items until the Subcontractors have been approved in writing by the Employer and their names have been added to this list of Approved Subcontractors.

Major Items of Plant and Services	Approved Subcontractors/Manufacturers	Nationality

Appendix 6. Scope of Works and Supply by the Employer

The following personnel, facilities, works and supplies shall apply as appropriate.

All personnel, facilities, works and supplies will be provided by the Employer in good time so as not to delay the performance of the Contractor, in accordance with the approved Time Schedule and Program of Performance pursuant to GCC Sub-Clause 31.2.

Unless otherwise indicated, all personnel, facilities, works and supplies will be provided free of charge to the Contractor.

Personnel	**Charge to Contractor (if any)**
The Employer will provide operating and maintenance personnel under the Contractor's supervision to get them (employer's O & M personnel) acquainted with and to witness the commissioning of the plant & machineries.	No charge to Contractor.

Facilities	**Charge to Contractor (if any)**

Works	**Charge to Contractor (if any)**
Employer will not do any works. If Contractor do not re-instate the Employer's existing facilities (Civil, fencing etc.) Employer will complete it.	Will be deducted from contractor's payment.

Supplies	**Charge to Contractor (if any)**
The Employer will not generally supply any machinery/Equipment and materials to the Contractor for the Substation. In the event of any such requirement and subject to availability, the Employer may extend the facilities to use such machinery and materials by the Contractor on rental charge/cost under normal terms and conditions.	The Contractor will be required to pay the amount to be determined by the Employer for such facilities required for the Substation.

Appendix 7. List of Documents for Approval or Review

Pursuant to GCC Sub-Clause 35.3.1, the Contractor shall prepare, or cause its Subcontractor to prepare, and present to the Project Manager in accordance with the requirements of GCC Sub-Clause 31.2 (Program of Performance), the following documents for

(A) Approval

1. Single Line Diagram of the Sub-station.
2. Site Layout Plan and arrangement drawings of the Sub-station
3. Proposed lay-down area for construction purpose.
4. Detailed soil investigation program where required, soil test report
5. Civil (Building and others) Drawing.
6. All drawings and design as per Section 7 (architectural, foundation and superstructure)
7. Installation drawings, lay out, grounding/earthing design, Lightning protection, lay out of fire protection etc.
8. All detail Specification, GTP, General Arrangement, Electrical, Mechanical, Dimensional, Cross-Sectional, Connection Drawing for equipment described in Price Schedule.
9. As Built Drawings.
10. Others as required.

(B) Review

1. Listing of additional equipment requirements to match design.

Appendix 8. Functional Guarantees

1. General

This Appendix sets out

(a) the functional guarantees referred to in GCC Clause43 (Functional Guarantees)

(b) the preconditions to the validity of the functional guarantees, either in production and/or consumption, set forth below

(c) the minimum level of the functional guarantees

(d) the formula for calculation of liquidated damages for failure to attain the functional guarantees.

2. Preconditions

The Contractor gives the functional guarantees (specified herein) for the facilities, subject to the following preconditions being fully satisfied: *[List any conditions for the carrying out of the Guarantee Test referred to in GCC Sub-Clause 40.2.*]

Mentioned in Section 7: Technical Specification & Section 8: GTP

3. Functional Guarantees

Performance of Individual equipment and Performance of Complete Sub-Station capacity as per Section 6: Schedule of Employer's Requirements, Section 7 & section 8 will be checked during Guarantee test. The Guarantee Test run/ Performance Test run of each sub-station shall carry out 03 (Three) days at full Power Transformer capacity without any trouble. Necessary testing arrangement to carry out the Commissioning, final inspection, Guarantee Test / performance test shall be supplied by the Contractor within the contract price. If any Test is not possible at site than related document during FAT/Routine Test Report can be used.

NESCO may take over completed portions of the work after at least three (3) weeks of observation to the outcome of the work, prior to completion of the Contract, by written notice to the Contractor.

Section 5. Tender and Contract Forms

Form	Title
	Tender Forms
PG5A – 1a	Tender Submission Letter for Technical Proposal
PG5A – 1b	Tender Submission Letter for Financial (Price) Proposal
PG5A – 2a	Tenderer Information Sheet
PG5A – 2b	JVCA Partner Information
PG5A – 2c	Subcontractor Information
PG5A – 3	Price Schedule for Plant and Services
PG5A – 4	Technical Proposal
PG5A – 4a	Specification submission & compliance sheet.
PG5A– 5	Manufacturer's Authorisation Letter
PG5A – 6	Bank Guarantee for Tender Security
PG5A – 6a	**Letter of Commitment for Bank's undertaking for Line of Credit (Form PG5A-6a)**
	Contract Forms
PG5A – 7	Notification of Award
PG5A – 8	Contract Agreement
PG5A – 9	Bank Guarantee for Performance Security
PG5A– 10	Bank Guarantee for Advance Payment
PG5A– 11	Bank Guarantee for Retention Money Security (Form PG5A-11)

Forms PG5A-1a, PG5A-1b to PG5A-6, PG5A-6a comprises part of the Tender and should be completed as stated in ITT Clause 24.

Forms PG5A-7 to PG5A-11 and the appendices of the tender comprises part of the Contract as stated in GCC Clause 6.

Tender Submission Letter for Technical offer
(Form PG5A-1a)

[This letter should be completed and signed by the Authorised Signatory preferably on the Letter-Head Pad of the Tenderer and be appended in the technical proposal envelope]

To:	Date:
[Contact Person]	
[Name of Procuring Entity]	
[Address of Procuring Entity]	
Invitation for Tender No:	*[indicate IFT No]*
Tender Package No:	*[indicate Package No]*
This Package is divided into the following Number of Lots	*[indicate number of Lot(s)]*

We, the undersigned, offer to design, manufacture, test, deliver, install, pre-commission and commission in conformity with the Tender Document, the following Plant and Services, viz:

In signing this letter, and in submitting our Tender, we also confirm that:

(a) our Tender shall be valid for the period stated in the Tender Data Sheet (ITT Sub Clause 30.1) and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(b) a Tender Security is attached in the form of a *[state pay order, bank draft, bank guarantee]* in the amount stated in the Tender Data Sheet (ITT Sub Clause 32) and valid for a period of twenty eight (28) days beyond the Tender validity date;

(c) we have examined and have no reservations to the Tender Document, issued by you on *[insert date];* including Addendum to Tender Document No(s) [*state numbers*] , issued in accordance with the Instructions to Tenderers (ITT Clause 11). *[insert the number and issuing date of each addendum; or delete this sentence if no Addendum has been issued];*

(d) we, including as applicable, any JVCA partner or Subcontractor for any part of the contract resulting from this Tender process, have nationalities from eligible countries, in accordance with ITT Sub Clause 5.1;

(e) we are submitting this Tender as a sole Tenderer in accordance with ITT Sub Clause 38.3

or

we are submitting this Tender as the partners of a JVCA, comprising the following other partners in accordance with ITT Sub Clause 18.1*;*

	Name of Partner	Address of Partner
1		
2		
3		
4		

(f) *we are not a Government owned entity as defined in ITT Sub Clause 5.3 or*
we are a Government owned entity, and we meet the requirements of ITT Sub Clause 5.3;
(delete one of the above as appropriate)

(g) we, including as applicable any JVCA partner, declare that we are not associated, nor have been associated in the past, directly or indirectly, with a consultant or any other entity that has prepared the design, specifications and other documents in accordance with ITT Sub Clause 5.5;

(h) we, including as applicable any JVCA partner or Subcontractor for any part of the contract resulting from this Tender process, have not been declared ineligible by the Government of Bangladesh on charges of engaging in corrupt, fraudulent, collusive or coercive practices in accordance with ITT Sub Clause 5.6;

(i) furthermore, we are aware of ITT Clause 4 concerning such practices and pledge not to indulge in such practices in competing for or in executing the Contract;

(j) we intend to subcontract an activity or part of the Works, in accordance with ITT Sub Clause 19.1, to the following Subcontractor(s);

Activity or part of the Plant and Services	Name of Subcontractor with Address

(k) we, including as applicable any JVCA partner, confirm that we do not have a record of poor performance, such as abandoning the works, not properly completing contracts, inordinate delays, or financial failure as stated in ITT Clause 5.7, and that we do not have, or have had, any litigation against us, other than that stated in the Tenderer Information (**Form PG5A-2b**);

(l) we are not participating as Tenderers in more than one Tender in this Tendering process. We understand that your written Notification of Award shall constitute the acceptance of our Tender and shall become a binding Contract between us, until a formal Contract is prepared and executed;

(m) we, including as applicable any JVCA partner, confirm that we do not have a record of insolvency, receivership, bankrupt or being wound up, our business activities were not been suspended, and it was not been the subject of legal proceedings in accordance with ITT Sub Clause 5.8;

(n) we, including as applicable any JVCA partner, confirm that we have fulfilled our obligations to pay taxes and social security contributions applicable under the relevant national laws and regulations of Bangladesh in accordance with ITT Sub Clause 5.9;

(o) we understand that you reserve the right to reject all the Tenders or annul the Tender proceedings, without incurring any liability to Tenderers, in accordance with ITT Clause 59.

Signature:	*[insert signature of authorised representative of the Tenderer]*
Name:	*[insert full name of signatory with National ID Number, if applicable]*
In the capacity of:	*[insert capacity of signatory]*
Duly authorised to sign the Tender for and on behalf of the Tenderer	

*[If there is more than one (1) signatory, or in the case of a JVCA, add other boxes and sign accordingly].***Attachment 1**:

[ITT Sub Clause 38.3]

Written confirmation authorising the above signatory(ies) to commit the Tenderer

[and, if applicable]

Attachment 2:

[ITT Sub Clause 29.2(b)]

Copy of the JVCA Agreement / Letter of Intent to form JVCA with draft proposed Agreement

Tender Submission Letter for Financial offer
(Form PG5A-1b)

[This letter should be completed and signed by the Authorised Signatory
preferably on the Letter-Head Pad of the Tendererand be appended in the financial proposal envelope]

To: Date:

[Contact Person]

[Name of Procuring Entity]

[Address of Procuring Entity]

Invitation for Tender No: *[indicate IFT No]*

Tender Package No: *[indicate Package No]*

This Package is divided into the following Number of Lots *[indicate number of Lot(s)]*

We, the undersigned, offer to design, manufacture, test, deliver, install, precommission and commission in conformity with the Tender Document, the following Plant and Services, viz:

In accordance with ITT Clauses 26 and 27, the following prices and discounts apply to our Tender:

The Tender Price is: (ITT Sub-Clause 26.1)	*[state amount in figures]* *and [state amount in words]*
Plant (including Mandatory Spare Parts) Supplied from abroad	*[state amount in figures]* *and [state amount in words]*
Plant (including Mandatory Spare Parts) supplied from within the Employer's Country	*Taka[state amount in figures]* *And Taka [state amount in words]*
Design Services	*[state amount in figures]* *and [state amount in words]*
Installation and Other Services	*[state amount in figures]* *and [state amount in words]*
Recommended Spare parts Price (If economic Factor is applicable)	*[state amount in figures]* *and [state amount in words]*
The Unconditional discount is (ITT Sub-Clause 23.11)	*[state amount in figures]* *and [state amount in words]*
The methodology for Application of the discount is:	*[state the methodology]*

and we shall accordingly submit an Advance Payment Guarantee in the format shown in Form PG5A- 10.

In signing this letter, and in submitting our Tender, we also confirm that:

a) our Tender shall be valid for the period stated in the Tender Data Sheet (ITT Sub Clause 30.1) and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

b) a Tender Security is attached in the form of a [state pay order, bank draft, bank guarantee] in the amount stated in the Tender Data Sheet (ITT Sub Clause 32) and valid for a period of twenty eight (28) days beyond the Tender validity date;

c) if our Tender is accepted, we commit to furnishing a Performance Security within the time stated under ITT Sub Clause 65.1) and in the form specified in the Tender Data Sheet (ITT Sub Clause 66.1) valid for a period of twenty eight (28) days beyond the date of issue of the Completion Certificate of the Plants and Services;

d) we have examined and have no reservations to the Tender Document, issued by you on [insert date]; including Addendum to Tender Document No(s) [state numbers] , issued in accordance with the Instructions to Tenderers (ITT Clause 11). [insert the number and issuing date of each addendum; or delete this sentence if no Addendum has been issued];

e) we, including as applicable, any JVCA partner or Subcontractor for any part of the contract resulting from this Tender process, have nationalities from eligible countries, in accordance with ITT Sub Clause 5.1;

f) we are submitting this Tender as a sole Tenderer in accordance with ITT Sub Clause 38.3 or
we are submitting this Tender as the partners of a JVCA, comprising the following other partners in accordance with ITT Sub Clause 18.1*;*

	Name of Partner	Address of Partner
1		
2		
3		
4		

g) we are not a Government owned entity as defined in ITT Sub Clause 5.3 or

we are a Government owned entity, and we meet the requirements of ITT Sub Clause 5.3;

(delete one of the above as appropriate)

h) we, including as applicable any JVCA partner, declare that we are not associated, nor have been associated in the past, directly or indirectly, with a consultant or any other entity that has prepared the design, specifications and other documents in accordance with ITT Sub Clause 5.5;

i) we, including as applicable any JVCA partner or Subcontractor for any part of the contract resulting from this Tender process, have not been declared ineligible by the Government of Bangladesh on charges of engaging in corrupt, fraudulent, collusive or coercive practices in accordance with ITT Sub Clause 5.6;

j) furthermore, we are aware of ITT Clause 4 concerning such practices and pledge not to indulge in such practices in competing for or in executing the Contract;

k) we intend to subcontract an activity or part of the Works, in accordance with ITT Sub Clause 19.1, to the following Subcontractor(s);

Activity or part of the Plant and Services	Name of Subcontractor with Address

l) we, including as applicable any JVCA partner, confirm that we do not have a record of poor performance, such as abandoning the works, not properly completing contracts, inordinate delays, or financial failure as stated in ITT Clause 5.7, and that we do not have, or have had, any litigation against us, other than that stated in the Tenderer Information **(Form PG5A-2b);**

m) we are not participating as Tenderers in more than one Tender in this Tendering process. We understand that your written Notification of Award shall constitute the acceptance of our Tender and shall become a binding Contract between us, until a formal Contract is prepared and executed;

n) we, including as applicable any JVCA partner, confirm that we do not have a record of insolvency, receivership, bankrupt or being wound up, our business activities were not been suspended, and it was not been the subject of legal proceedings in accordance with ITT Sub Clause 5.8;

o) we, including as applicable any JVCA partner, confirm that we have fulfilled our obligations to pay taxes and social security contributions applicable under the relevant national laws and regulations of Bangladesh in accordance with ITT Sub Clause 5.9;

p) we understand that you reserve the right to reject all the Tenders or annul the Tender proceedings, without incurring any liability to Tenderers, in accordance with ITT Clause 61

Signature:	*[insert signature of authorised representative of the Tenderer]*
Name:	*[insert full name of signatory with National ID Number]*
In the capacity of:	*[insert capacity of signatory]*
Duly authorised to sign the Tender for and on behalf of the Tenderer	

*[If there is more than one (1) signatory, or in the case of a JVCA, add other boxes and sign accordingly].***Attachment 1**:
[ITT Sub Clause 38.3]
Written confirmation authorising the above signatory(ies) to commit the Tenderer

[and, if applicable]

Attachment 2:
[ITT Sub Clause 29.2(b)]
Copy of the JVCA Agreement / Letter of Intent to form JVCA with draft proposed Agreement

Tenderer Information (Form PG5A-2a)

[This Form should be completed only by the Tenderer, preferably on its Letter-Head Pad]

Invitation for Tender No:	*[indicate IFT No]*
Tender Package No:	*[indicate Package No]*
This Package is divided into the following Number of Lots:	*[indicate number of Lot(s)]*

1.	Eligibility Information of the Tenderer [ITT –Clauses 5 & 29]				
1.1	Nationality of individual or country of registration				
1.2	Tenderer's legal title				
1.3	Tenderer's registered address				
1.4	Tenderer's legal status *[complete the relevant box]*				
	Proprietorship				
	Partnership				
	Limited Liability Concern				
	Government-owned Enterprise				
	Others [please describe, if applicable]				
1.5	Tenderer's year of registration				
1.6	Tenderer's authorised representative details				
	Name				
	National ID number				
	Address				
	Telephone / Fax numbers				
	e-mail address				
1.7	Litigation [ITT Cause 13]				
	If there is no history of litigation or no pending litigation then state opposite "None". If there is a history of litigation, or a number of awards, against the Tenderer provide details below				
	A. Arbitration Awards made against				
	ar	Matter in dispute	Value of Award	Value of Claim	

	B. **Arbitration Awards pending**			
	Year	Matter in dispute	Value of Claim	

1.8	Tenderer to attach photocopies of the original documents mentioned aside	[All documents required under ITT Clauses 5 and 29]
The following two information are applicable for National Tenderers		
1.9	Tenderer's Value Added Tax Registration (VAT) Number	
1.10	Tenderer's Tax Identification Number(TIN)	
[The foreign Tenderers, in accordance with ITT Sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]		

2. Qualification Information of the Tenderer [ITT Clause 29]					
2.1 General Experience in Plant and Services of Tenderer					
	Start Month Year	End Month Year	Years	Contract No and Name of Contract Name and Address of Procuring Entity Brief description of Plant and Services	Role of Tenderer [Contractor/Subcontractor /Management Contractor]

2.2	Specific Experience in Key Activities			
	Contract No Name of Contract	[insert reference no] of [insert year] [insert name]		
	Role in Contract *[tick relevant box].*	Contractor	Subcontractor	Management Contractor
	\Award date Completion date Total Contract Value	[insert date] [insert date] [insert amount]		
	Procuring Entity's Name Address Tel / Fax e-mail Brief description with justifications of the similarity compared to the Procuring Entity's	[state justification in support of its similarity compared to the proposed works]		

	requirements	

2.3	Average annual turnover [ITT Sub Clause15.1(a)] *[amount invoiced to Procuring Entity(s) for each year of works in progress or completed, using rate of exchange at the end of the period reported]*		
	Year	Amount & Currency	*amount in figures*

2.4	Financial Resources available to meet the cash flow [ITT Sub Clause 15.1(b)]		
	No	Source of Financing	Amount Available

	In order to confirm the above statements the Tenderer shall submit , as applicable, the documents mentioned in ITT Sub Clause 14.1(a), (b) and 15.1 (a), (b) & (c)
2.5	Contact Details
	Name, address, and other contact details of Tenderer Bankers and other Procuring Entity(s) that may provide references, if contacted by this Procuring Entity
2.6	Qualifications and experience of key technical and administrative personnel proposed for Contract administration and management [ITT Sub Clause 16.1]

	Position Name Years of General Experience	Years of Specific Experience

	[*Tenderer to complete details of as many personnel as are applicable.Each personnel listed above should complete the Personnel Information (Form PG5A-5*)]
2.7	Major Equipment proposed to carry out the Contract [ITT Sub Clause 17.1]

	Item of Equipment	Condition (new, good, average, poor)	Owned, leased or to be purchased (state owner, less or seller)

[Tenderer to list details of each item of major equipment, as applicable]			

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

JVCA Partner Information (Form PG5A-2b)

[This Form should be completed by each JVCA partner].

Invitation for Tender No:	*[indicate IFT No]*
Tender Package No	*[indicate Package No]*
This Package is divided into the following Number of Lots	*[indicate number of Lot(s)]*

1.	Eligibility Information of the JVCA Partner [*ITT –Clauses 5 & 29]*			
1.1	Nationality of Individual or country of Registration			
1.2	JVCA Partner's legal title			
1.3	JVCA Partner's registered address			
1.4	JVCA Partner's legal status *[complete the relevant box]*			
	Proprietorship			
	Partnership			
	Limited Liability Concern			
	Government-owned Enterprise			
	Other (please describe, if applicable)			
1.5	JVCA Partner's year of registration			
1.6	JVCA Partner's authorised representative details			
	Name			
	National ID number			
	Address			
	Telephone / Fax numbers			
	e-mail address			
1.7	Litigation [ITT Sub Cause 13]			
	If there is no history of litigation or no pending litigation then state "None". If there is a history of litigation, or a number of awards, against the JVCA Partner provide details below:			
	A. Arbitration Awards made against			
	Year	Matter in dispute	Value of Award	Value of Claim
	B. Arbitration Awards pending			
	Year	Matter in dispute	Value of Claim	

1.8	JVCA Partner to attach copies of the original documents mentioned aside	[All documents required under ITT Clauses 5 and 29]	
The following two information are applicable for national JVCA Partners only			
1.9	JVCA Partner's Value Added Tax Registration (VAT) Number		
1.10	JVCA Partner's Tax Identification Number (TIN)		
	[The foreign JVCA Partners, in accordance with ITT Sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]		

	2. Key Activity(ies) for which it is intended to be joint ventured [ITT Sub Clause 18.2 & 18.3]	
	Elements of Activity	Brief description of Activity

3.	Qualification Information of the JVCA Partner [ITT Clause 18]				
3.1	General Experience in Plant and Services of JVCA Partner				
	Start Month Year	End Month Year	Years	Contract No and & Name of Contract Name and Address of Procuring Entity Brief description of Works	Role of JVCA Partner [Contractor/Subcontractor/Management Contractor]

3.2	Specific Experience in Key Activities			
	Contract No Name of Contract	[insert reference no] of [insert year] [insert name]		
	Role in Contract [tick relevant box]	Contractor	Subcontractor	Management Contractor
	Award date Completion date Total Contract Amount	[insert date] [insert date] [insert amount]		
	Procuring Entity's Name Address Tel / Fax	[state justification in support of its similarity compared to the proposed plants and service]		

	e-mail	Brief description with justifications of the similarity compared to the Procuring Entity's requirements

3.3	Average annual construction turnover [ITT Sub Clause 15.1 (a)] *[amount invoiced to Procuring Entity(s) for each year of work in progress or completed, using rate of exchange at the end of the period reported]*		
	Year	Amount & Currency	Amount in Figures
3.4	Financial Resources available to meet the cash flow [ITT Sub-Clause 15.1(b)]		
		Source of financing	Amount available
	In order to confirm the above statements the JVCA Partner shall submit , as applicable, the documents mentioned in ITT Sub Clause 14.1 (a) & (b)15.1 (a), (b), (c) & (d)		
3.5	Contact Details		
	Name, address, and contact details of Tenderer's Bankers and other Procuring Entity(s) that may provide references if contacted by this Procuring Entity		
3.6	Qualifications and experience of key technical and administrative personnel proposed for Contract administration and management [ITT Sub Clause 16.1]		
	Position Name Years of General Experience	Years of Specific Experience	
	[Tenderer to complete details of as many personnel as are applicable. Each personnel listed above should complete the Personnel Information (Form PG5A-5)]		
3.7	Major items of Construction Equipment proposed for carrying out the works [ITT Sub-Clause 17.1]		
	Item of Equipment	Condition (new, good, average, poor)	Owned, leased or to be purchased (state owner, leaser or seller)
	[Tenderer to list details of each item of Major equipment, as applicable]		

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Following annexures are attached at the end of the document

Annexure: 5-1 Tenderer's Completed Turnkey Contracts
Annexure: 5-2 Tenderer's Ongoing Turnkey Contract(s)
Annexure: 5-3 Financial Requirements for Ongoing Turnkey Contract(s) Commitments
Annexure: 5-4 Assessment of Financial Resources Availability

Subcontractor Information (Form PG5A-2c)

[This Form should be completed by each Subcontractor, preferably on its Letter-Head Pad]

Invitation for Tender No:	*[indicate IFT No]*
Tender Package No	*[indicate Package No]*
This Package is divided into the following Number of Lots	*[indicate number of Lot(s)]*

1. Eligibility Information of the Subcontractor [*ITT –Clauses 5 & 29]*		
1.1	Nationality of Individual or country of Registration	
1.2	Subcontractor's legal title	
1.3	Subcontractor's registered address	
1.4	Subcontractor's legal status *[complete the relevant box*	
	Proprietorship	
	Partnership	
	Limited Liability Concern	
	Government-owned Enterprise	
	Other (please describe)	
.1.5	Subcontractor's year of registration	
1.6	Subcontractor's authorised representative details	
	Name	
	Address	
	Telephone / Fax numbers	
	e-mail address	
1.7	Subcontractor to attach copies of the following original documents	All documents to the extent relevant to ITT Clause 5 and 29 in support of its qualifications
The following two information are applicable for national Subcontractors		
1.8	Subcontractor's Value Added Tax Registration (VAT) Number	
1.9	Subcontractor's Tax Identification Number(TIN)	
[The foreign Subcontractors , in accordance with ITT sub Clause 5.1, shall provide evidence by a written declaration to that effect to demonstrate that it meets the criterion]		
2. Key Activity(ies) for which it is intended to be Subcontracted [ITT Sub Clause 19.1]		

2.1	Elements of Activity	Brief description of Activity
2.2	List of Similar Contracts in which the proposed Subcontractor had been engaged	
	Name of Contract and Year of Execution	
	Value of Contract	
	Name of Procuring Entity	
	Contact Person and contact details	
	Type of Assignment performed	

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Price Schedule for Plant and Service (Form PG5A-3)

(This form should be completed and submitted by the tenderer and appended in the financial proposal envelope)

Invitation for Tender No:	*[indicate IFT No]*
Tender Package No	*[indicate Package No]*
This Package is divided into the following Number of Lots	*[indicate number of Lot(s)]*

General

1. The Price Schedules are divided into separate Schedules as follows:

   Schedule No. 1: Plant (including Mandatory Spare Parts) Supplied from Abroad
   Schedule No. 2: Plant (including Mandatory Spare Parts) Supplied from within the Employer's Country
   Schedule No. 3: Civil Works
   Schedule No. 4: Substation Wise Summary
   Schedule No. 5: Grand Summary
   Schedule No. 6: Supplier-recommended spare parts

2. The Schedules do not generally give a full description of the plant to be supplied and the services to be performed under each item. Tenderers shall be deemed to have read the Employer's Requirements and other sections of the Tender Document and reviewed the Drawings to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices. The entered rates and prices shall be deemed to cover the full scope as aforesaid, including overheads and profit.

3. If tenderers are unclear or uncertain as to the scope of any item, they shall seek clarification in accordance with ITT 9.1 prior to submitting their tender.

Pricing

4. Prices shall be filled in indelible ink, and any alterations necessary due to errors, etc., shall be initialed by the Tenderer.

   As specified in the Tender Data Sheet and Special Conditions of Contract, prices shall be fixed and firm for the duration of the Contract, or prices shall be subject to adjustment in accordance with the corresponding Appendix (Price Adjustment) to the Contract Agreement.

5. Tender prices shall be quoted in the manner indicated and in the currencies specified in the Instructions to Tenderers in the Tender Document.

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

   Prices given in the Schedules against each item shall be for the scope covered by that item as detailed in Section 6 (Employer's Requirements) or elsewhere in the Tender Document.

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

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

Schedules of Rates and Prices

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

Schedule No. 1.a: Substation-1

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1			
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1			
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	4			
4	Supply of 33 KV , Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories	Set (1 set = 3 nos.)	4			
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	4			
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	3			
7	Supply of 33 KV Bus Section Isolator, 1250A, 31.5 KA sor 3 sec without earthing blade gang operated horizontal structure for installation on gantry steel structure with necessary connections and accessories.	Set	1			
8	Supply of 33 kV, Off-load fused Isolator for Auxiliary	Set	3			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	Transformer and Bus PT with supporting steel structure and necessary connectors.					
9	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	4			
10	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	2			
11	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1			
12	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1			
13	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1			
14	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1			
15	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1			
	Tension clamps with fitting					
	PG Clamp					
	Support clamp					
16	Supply of 2×150 mm2 grounding copper conductor.	Lot	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
17	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1			
18	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1			
19	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF + 1 SEF, AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.	Set	1			
20	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	3			
21	Supply of Substation galvanized steel structure material 3 (Three) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1			
22	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1			
23	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh	Set	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	meters, MW meters, kVAR & PF meter and all other accessories as required.					
24	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3			
25	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1			
26	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300			
27	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180			
28	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280			
29	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set= 3No.)	1			
30	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
31	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1			
32	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1			
33	Supply of DC Distribution Panel with interlocking.	Set	1			
34	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1			
35	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1			
36	Supply of Fire Extinguisher equipment a) CO2 (02 nos.) b) Foam type (02 nos.) c) Dry Chemical type (02 nos.)	Lot	1			
37	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3			
38	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10			
39	Supply of Desktop Computer with UPS, Scanner, Printer, LED Electronic Sign board.	Lot	1			
40	Supply of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing upto Commissioning as per approved	Lot	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	design & drawing and instruction of Engineer-in -charge /Employer.					
41	Mandatory spare parts (master trip relay, auxiliary relay, O/C & E/F relay, Trip coil 33 KV, Trip coil 11 KV, Closing coil, Charging Motor, Trip Circuit supervision Relay, Annunciator etc. as mentioned in Chapter 6: Employer Requirements.	Lot	1			
Column 6 to be carried forward to Schedule No. 4. Substation Wise Summary						

Country of Origin Declaration Form

Item	Description	Country

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorized to sign the Tender for and on behalf of the Tenderer		

Note: The function of C& F agent and Insurance (both foreign and local) shall have to be completed by the tenderer. The cost regarding C & F agent and Insurance shall have to be included in the price schedule.

Schedule No. 1.b: Substation-2

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1			
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1			
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	4			
4	Supply of 33 KV , Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories	Set (1 set = 3 nos.)	4			
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	4			
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	3			
7	Supply of 33 KV Bus Section Isolator, 1250A, 31.5 KA sor 3 sec without earthing blade gang operated horizontal structure for installation on gantry steel structure with necessary connections and accessories.	Set	1			
8	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	3			
9	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming	Set (1 set = 3	4			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	nos.)				
10	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	2			
11	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1			
12	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1			
13	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1			
14	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1			
15	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1			
	Tension clamps with fitting					
	PG Clamp					
	Support clamp					
16	Supply of 2×150 mm2 grounding copper conductor.	Lot	1			
17	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1			
18	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and	Lot	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	earthing mesh.					
19	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF + 1 SEF, AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.	Set	1			
20	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	3			
21	Supply of Substation galvanized steel structure material 3 (Three) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1			
22	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1			
23	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1			
24	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF	Set	3			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.					
25	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1			
26	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300			
27	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180			
28	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280			
29	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set= 3No.)	1			
30	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1			
31	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1			
32	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
33	Supply of DC Distribution Panel with interlocking.	Set	1			
34	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1			
35	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1			
36	Supply of Fire Extinguisher equipment a) CO2 (02 nos.) b) Foam type (02 nos.) c) Dry Chemical type (02 nos.)	Lot	1			
37	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3			
38	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10			
39	Supply of Desktop Computer with UPS, LED Electronic Sign board.	Lot	1			
40	Supply of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing up to Commissioning as per approved design & drawing and instruction of Engineer-in -charge /Employer.	Lot	1			
41	Mandatory spare parts (master trip relay, auxiliary relay, O/C & E/F relay, Trip coil 33 KV, Trip coil 11 KV, Closing coil,	Lot	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	Charging Motor, Trip Circuit supervision Relay, Annunciator etc. as mentioned in Chapter 6: Employer Requirements.					
Column 6 to be carried forward to Schedule No. 4. Substation Wise Summary						

Country of Origin Declaration Form

Item	Description	Country

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorized to sign the Tender for and on behalf of the Tenderer		

Note: The function of C& F agent and Insurance (both foreign and local) shall have to be completed by the tenderer. The cost regarding C & F agent and Insurance shall have to be included in the price schedule.

Schedule No. 1.c: Substation-3

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1			
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1			
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	2			
4	Supply of 33 KV , Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories	Set (1 set = 3 nos.)	2			
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	2			
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	1			
7	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	2			
8	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	2			
9	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3) class .2 and 3P, along with supporting	Set (1 set = 3	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	materials for installation on gantry structure with necessary connectors and other accessories.	nos.)				
10	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1			
11	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1			
12	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1			
13	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1			
14	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1			
	Tension clamps with fitting					
	PG Clamp					
	Support clamp					
15	Supply of 2×150 mm2 grounding copper conductor.	Lot	1			
16	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1			
17	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1			
18	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF + AVR relay for automatic OLTC operation	Set	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.					
19	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	1			
20	Supply of Substation galvanized steel structure material 2 (Two) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1			
21	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1			
22	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1			
23	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3			
24	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
25	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300			
26	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180			
27	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280			
28	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set= 3No.)	1			
29	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1			
30	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1			
31	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1			
32	Supply of DC Distribution Panel with interlocking.	Set	1			
33	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
34	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1			
35	Supply of Fire Extinguisher equipment a) CO2 (02 nos.) b) Foam type (02 nos.) c) Dry Chemical type (02 nos.)	Lot	1			
36	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3			
37	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10			
38	Supply of Desktop Computer with UPS, LED Electronic Sign board.	Lot	1			
Column 6 to be carried forward to Schedule No. 4. Substation Wise Summary						

Country of Origin Declaration Form

Item	Description	Country

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorized to sign the Tender for and on behalf of the Tenderer		

Note: The function of C& F agent and Insurance (both foreign and local) shall have to be completed by the tenderer. The cost regarding C & F agent and Insurance shall have to be included in the price schedule.

Schedule No. 1.d: Substation-4

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1			
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1			
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	2			
4	Supply of 33 KV , Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories	Set (1 set = 3 nos.)	2			
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	2			
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	1			
7	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	2			
8	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	2			
9	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3) class .2 and 3P, along with supporting	Set (1 set = 3	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	materials for installation on gantry structure with necessary connectors and other accessories.	nos.)				
10	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1			
11	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1			
12	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1			
13	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1			
14	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1			
	Tension clamps with fitting					
	PG Clamp					
	Support clamp					
15	Supply of 2×150 mm2 grounding copper conductor.	Lot	1			
16	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1			
17	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1			
18	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF + AVR relay for automatic OLTC operation	Set	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.					
19	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	1			
20	Supply of Substation galvanized steel structure material 2 (Two) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1			
21	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1			
22	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1			
23	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3			
24	Supply of Rubber Pad to be laid in front of the 11 kV	Lot	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
	panels.					
25	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300			
26	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180			
27	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280			
28	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set= 3No.)	1			
29	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1			
30	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1			
31	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1			
32	Supply of DC Distribution Panel with interlocking.	Set	1			

Line Item No	Description of Item	Unit	Quantity	Unit Price CIP [BSCIC, Sirajganj] [Foreign Currency]	CIP price per Line Item [Foreign Currency]	Taxes and Duties In Local Currency
1	2	3	4	5	6 = 4 x 5	7
33	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1			
34	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1			
35	Supply of Fire Extinguisher equipment a) CO2 (02 nos.) b) Foam type (02 nos.) c) Dry Chemical type (02 nos.)	Lot	1			
36	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3			
37	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10			
38	Supply of Desktop Computer with UPS, LED Electronic Sign board.	Lot	1			
Column 6 to be carried forward to Schedule No. 4. Substation Wise Summary						

Country of Origin Declaration Form

Item	Description	Country

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorized to sign the Tender for and on behalf of the Tenderer		

Note: The function of C& F agent and Insurance (both foreign and local) shall have to be completed by the tenderer. The cost regarding C & F agent and Insurance shall have to be included in the price schedule.

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

Schedule No. 2.a: Substation-1

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1				
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1				
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	4				
4	Supply of 33 KV , Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories	Set (1 set = 3 nos.)	4				
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	4				
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	3				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
7	Supply of 33 KV Bus Section Isolator, 1250A, 31.5 KA sor 3 sec without earthing blade gang operated horizontal structure for installation on gantry steel structure with necessary connections and accessories.	Set	1				
8	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	3				
9	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	4				
10	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	2				
11	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1				
12	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
13	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1				
14	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1				
15	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1				
	Tension clamps with fitting						
	PG Clamp						
	Support clamp						
16	Supply of 2×150 mm2 grounding copper conductor.	Lot	1				
17	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1				
18	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1				
19	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF + 1 SEF,	Set	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.						
20	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	3				
21	Supply of Substation galvanized steel structure material 3 (Three) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1				
22	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1				
23	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other	Set	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	accessories as required.						
24	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3				
25	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1				
26	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300				
27	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180				
28	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280				
29	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter,	Set (1Set	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	= 3No.)					
30	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1				
31	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1				
32	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1				
33	Supply of DC Distribution Panel with interlocking.	Set	1				
34	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1				
35	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1				
36	Supply of Fire Extinguisher equipment a) CO2 (02 nos.) b) Foam type (02 nos.)	Lot	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	c) Dry Chemical type (02 nos.)						
37	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3				
38	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10				
39	Supply of Desktop Computer with UPS, Scanner, Printer, LED Electronic Sign board.	Lot	1				
40	Supply of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing upto Commissioning as per approved design & drawing and instruction of Engineer-in -charge /Employer.	Lot	1				
41	Mandatory spare parts (master trip relay, auxiliary relay, O/C & E/F relay, Trip coil 33 KV, Trip coil 11 KV, Closing coil, Charging Motor, Trip Circuit supervision Relay, Annunciator etc. as mentioned in Chapter 6: Employer Requirements.	Lot	1				
42	All Design, Drawing and Documentation works including 06 (Six) Sets of As-Built drawings and substations operation and	Lot	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	maintenance manual (Drawings in AutoCAD format)						
43	Installation, Erection, Testing, Commissioning of each part of the whole substation (As per Scope of Works, Technical Specification and GTP).	Lot	1				
Column 5 to be carried forward to Schedule No. 4. Substation Wise Summary							

Note: 1. ***Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies***

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 2.b: Substation-2

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1				
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1				
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	4				
4	Supply of 33 KV , Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories	Set (1 set = 3 nos.)	4				
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	4				
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	3				
7	Supply of 33 KV Bus Section Isolator, 1250A, 31.5 KA sor 3 sec without earthing blade gang operated horizontal	Set	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	structure for installation on gantry steel structure with necessary connections and accessories.						
8	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	3				
9	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	4				
10	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	2				
11	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1				
12	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1				
13	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk,	Lot	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.						
14	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1				
15	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1				
	Tension clamps with fitting						
	PG Clamp						
	Support clamp						
16	Supply of 2×150 mm2 grounding copper conductor.	Lot	1				
17	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1				
18	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1				
19	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF + 1 SEF, AVR relay for automatic OLTC operation including digital indication system for	Set	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.						
20	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	3				
21	Supply of Substation galvanized steel structure material 3 (Three) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1				
22	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1				
23	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
24	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3				
25	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1				
26	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300				
27	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180				
28	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280				
29	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other	Set (1Set =	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	accessories as per Scope of Plant & Services, Technical Specification and GTP.	3No.)					
30	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1				
31	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1				
32	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1				
33	Supply of DC Distribution Panel with interlocking.	Set	1				
34	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1				
35	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1				
36	Supply of Fire Extinguisher equipment a) CO2 (02 nos.) b) Foam type (02 nos.)	Lot	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	c) Dry Chemical type (02 nos.)						
37	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3				
38	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10				
39	Supply of Desktop Computer with UPS, LED Electronic Sign board.	Lot	1				
40	Supply of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing up to Commissioning as per approved design & drawing and instruction of Engineer-in -charge /Employer.	Lot	1				
41	Mandatory spare parts (master trip relay, auxiliary relay, O/C & E/F relay, Trip coil 33 KV, Trip coil 11 KV, Closing coil, Charging Motor, Trip Circuit supervision Relay, Annunciator etc. as mentioned in Chapter 6: Employer Requirements.	Lot	1				
42	All Design, Drawing and Documentation works including 06 (Six) Sets of As-Built drawings and substations operation and maintenance manual (Drawings in	Lot	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	AutoCAD format)						
43	Installation, Erection, Testing, Commissioning of each part of the whole substation (As per Scope of Works, Technical Specification and GTP).	Lot	1				
Column 5 to be carried forward to Schedule No. 4. Substation Wise Summary							

Note: 1. ***Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies***

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 2.c: Substation-3

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1				
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1				
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	2				
4	Supply of 33 KV , Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories	Set (1 set = 3 nos.)	2				
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	2				
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	1				
7	Supply of 33 kV, Off-load fused Isolator	Set	2				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.						
8	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	2				
9	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	1				
10	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1				
11	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1				
12	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
13	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1				
14	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1				
	Tension clamps with fitting						
	PG Clamp						
	Support clamp						
15	Supply of 2×150 mm2 grounding copper conductor.	Lot	1				
16	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1				
17	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1				
18	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF + AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 &	Set	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	Section 8.						
19	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	1				
20	Supply of Substation galvanized steel structure material 2 (Two) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1				
21	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1				
22	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1				
23	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT	Set	3				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.						
24	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1				
25	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300				
26	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180				
27	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280				
28	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set = 3No.)	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
29	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1				
30	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1				
31	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1				
32	Supply of DC Distribution Panel with interlocking.	Set	1				
33	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1				
34	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1				
35	Supply of Fire Extinguisher equipment a) CO2 (02 nos.) b) Foam type (02 nos.) c) Dry Chemical type (02 nos.)	Lot	1				
36	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB	Set	3				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	and all other accessories as required.						
37	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10				
38	Supply of Desktop Computer with UPS, LED Electronic Sign board.	Lot	1				
39	All Design, Drawing and Documentation works including 06 (Six) Sets of As-Built drawings and substations operation and maintenance manual (Drawings in AutoCAD format)	Lot	1				
40	Installation, Erection, Testing, Commissioning of each part of the whole substation (As per Scope of Works, Technical Specification and GTP).	Lot	1				
Column 5 to be carried forward to Schedule No. 4. Substation Wise Summary							

Note: 1. ***Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies***

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 2.d: Substation-4

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1				
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1				
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	2				
4	Supply of 33 KV , Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories	Set (1 set = 3 nos.)	2				
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	2				
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	1				
7	Supply of 33 kV, Off-load fused Isolator	Set	2				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.						
8	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	2				
9	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	1				
10	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1				
11	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1				
12	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
13	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1				
14	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1				
	Tension clamps with fitting						
	PG Clamp						
	Support clamp						
15	Supply of 2×150 mm2 grounding copper conductor.	Lot	1				
16	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1				
17	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1				
18	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF + AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 &	Set	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	Section 8.						
19	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	1				
20	Supply of Substation galvanized steel structure material 2 (Two) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1				
21	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1				
22	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1				
23	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT	Set	3				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.						
24	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1				
25	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300				
26	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180				
27	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280				
28	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set = 3No.)	1				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
29	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1				
30	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1				
31	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1				
32	Supply of DC Distribution Panel with interlocking.	Set	1				
33	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1				
34	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1				
35	Supply of Fire Extinguisher equipment a) CO2 (02 nos.) b) Foam type (02 nos.) c) Dry Chemical type (02 nos.)	Lot	1				
36	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB	Set	3				

Line Item No.	Description of Item	Quantity		Unit Price EXW (BDT)	Total EXW Price (BDT)	Sales Tax (BDT)	Total Price (Taka)
1	2	3		4	5 = 3x 4	6	7 = 5 + 6
	and all other accessories as required.						
37	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10				
38	Supply of Desktop Computer with UPS, LED Electronic Sign board.	Lot	1				
39	All Design, Drawing and Documentation works including 06 (Six) Sets of As-Built drawings and substations operation and maintenance manual (Drawings in AutoCAD format)	Lot	1				
40	Installation, Erection, Testing, Commissioning of each part of the whole substation (As per Scope of Works, Technical Specification and GTP).	Lot	1				
Column 5 to be carried forward to Schedule No. 4. Substation Wise Summary							

Note: 1. ***Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies***

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 3 - Civil Works

Schedule No. 3.a: Substation-1

Item	Description of items	Unit	Quantity	Rate (BDT)	Amount (BDT)
1	2	3	4	5	6 = 4*5
1	a) Land development with filling by sand with height of 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Landscaping, Leveling, Dressing / Prepararion of Gravel Pit, Laying of Gravel as required. The area to be developed for substation construction is 45x35 sq meter.	Lot	1		
2	b) Sub-station Control room Building, two storied with 150 square meter per floor having 3 storied foundation including Switch Gear Room, Battery room, O/H Tank, Water Supply, Sanitary system, Internal Electrification, Emergency Lighting, False Ceiling etc.	sq meter	300		
3	c) Approach including internal road ,walkway, Drainage System & guard post building.	Lot	1		
4	d) Retaining wall (one meter height) which covers 45x35 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 35 meter length).	Lot	1		
5	e) Foundation of Equipment, Power & Control Cable Trench etc.	Lot	1		
6	f) Switch Yard Fencing with Gate.	Lot	1		
7	g) Peripheral fencing which covers a 105x72 square meter of land with gates.	meter	354		
8	h) Yard lighting and emergency lighting.	Lot	1		

Item	Description of items	Unit	Quantity	Rate (BDT)	Amount (BDT)
1	2	3	4	5	6 = 4*5
9	i) Operation Key Board, Table, chair Steel Almirah, File Cabinet, Ceiling Fans etc.	Lot	1		
10	j) Tree plantation, gardening and beautification.	Lot	1		
TOTAL Column 6 to be carried forward to Schedule No. 4. Substation Wise Summary					

[1]*Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies*

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 3.b: Substation-2

Item	Description of items	Unit	Quantity	Rate (BDT)	Amount (BDT)
1	2	3	4	5	6 = 4*5
1	a) Land development with filling by sand with height of 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Landscaping, Leveling, Dressing / Prepararion of Gravel Pit, Laying of Gravel as required. The area to be developed for substation construction is 45x35 sq meter.	Lot	1		
2	b) Sub-station Control room Building, two storied with 150 square meter per floor having 3 storied foundation including Switch Gear Room, Battery room, O/H Tank, Water Supply, Sanitary system, Internal Electrification, Emergency Lighting, False Ceiling etc.	sq meter	300		
3	c) Approach including internal road ,walkway, Drainage System and guard post building.	Lot	1		
4	d) Retaining wall (one meter height) which covers 45x35 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 35 meter length).	Lot	1		
5	e) Foundation of Equipment, Power & Control Cable Trench etc.	Lot	1		
6	f) Switch Yard Fencing with Gate..	Lot	1		
7	g) Peripheral fencing which covers a 71x52 square meter of land with gates.	meter	246		
8	h) Yard lighting and emergency lighting.	Lot	1		
9	i) Operation Key Board, Table, chair Steel Almirah, File	Lot	1		

Item	Description of items	Unit	Quantity	Rate (BDT)	Amount (BDT)
1	2	3	4	5	6 = 4*5
	Cabinet, Ceiling Fans etc.				
10	j) Tree plantation, gardening and beautification.	Lot	1		
TOTAL Column 6 to be carried forward to Schedule No. 4. Substation Wise Summary					

[1]*Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies*

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 3.c: Substation-3

Item	Description of items	Unit	Quantity	Rate (BDT)	Amount (BDT)
1	2	3	4	5	6 = 4*5
1	a) Land development with filling by sand with height of 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Landscaping, Leveling, Dressing / Prepararion of Gravel Pit, Laying of Gravel as required. The area to be developed for substation construction is 45x30 sq meter.	Lot	1		
2	b) Sub-station Control room Building, two storied with 120 square meter per floor having 3 storied foundation including Switch Gear Room, Battery room, O/H Tank, Water Supply, Sanitary system, Internal Electrification, Emergency Lighting, False Ceiling etc.	sq meter	240		
3	c) Approach including internal road ,walkway, Drainage System and guard post building.	Lot	1		
4	d) Retaining wall (one meter height) which covers 45x30 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 30 meter length).	Lot	1		
5	e) Foundation of Equipment, Power & Control Cable Trench etc.	Lot	1		
6	f) Switch Yard Fencing with Gate.	Lot	1		
7	g) Peripheral fencing which covers a land of 253 meter circumference with gates.	meter	253		
8	h) Yard lighting and emergency lighting.	Lot	1		
9	i) Operation Key Board, Table, chair Steel Almirah, File	Lot	1		

Item	Description of items	Unit	Quantity	Rate (BDT)	Amount (BDT)
1	2	3	4	5	6 = 4*5
	Cabinet, Ceiling Fans etc.				
10	j) Tree plantation, gardening and beautification.	Lot	1		
TOTAL Column 6 to be carried forward to Schedule No. 4. Substation Wise Summary					

[1]*Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies*

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 3.d: Substation-4

Item	Description of items	Unit	Quantity	Rate (BDT)	Amount (BDT)
1	2	3	4	5	6 = 4*5
1	a) Land development with filling by sand with height of 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Landscaping, Leveling, Dressing / Prepararion of Gravel Pit, Laying of Gravel as required. The area to be developed for substation construction is 45x30 sq meter.	Lot	1		
2	b) Sub-station Control room Building, two storied with 120 square meter per floor having 3 storied foundation including Switch Gear Room, Battery room, O/H Tank, Water Supply, Sanitary system, Internal Electrification, Emergency Lighting, False Ceiling etc.	sq meter	240		
3	c) Approach including internal road ,walkway, Drainage System and guard post building.	Lot	1		
4	d) Retaining wall (one meter height) which covers 45x30 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 30 meter length).	Lot	1		
5	e) Foundation of Equipment, Power & Control Cable Trench etc.	Lot	1		
6	f) Switch Yard Fencing with Gate.	Lot	1		
7	g) Peripheral fencing which covers a land of 203 meter circumference with gates.	meter	203		
8	h) Yard lighting and emergency lighting.	Lot	1		
9	i) Operation Key Board, Table, chair Steel Almirah, File	Lot	1		

Item	Description of items	Unit	Quantity	Rate (BDT)	Amount (BDT)
1	2	3	4	5	6 = 4*5
	Cabinet, Ceiling Fans etc.				
10	j) Tree plantation, gardening and beautification.	Lot	1		
TOTAL Column 6 to be carried forward to Schedule No. 4. Substation Wise Summary					

[1]*Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies*

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 4- Substation Wise Summary
Schedule No. 4.a: Substation-1

Schedule No.	Title	Total Price	
		Foreign Currency	Local Currency
1.a	Plant and Mandatory Spare Parts Supplied from Abroad		
2.a	Plant and Mandatory Spare Parts Supplied from Within the Employer's Country		
3.a	Civil Works		
Substation TOTAL to be carried forward to Grand Summary			

Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 4.b: Substation-2

Schedule No.	Title	Total Price	
		Foreign Currency	Local Currency
1.b	Plant and Mandatory Spare Parts Supplied from Abroad		
2.b	Plant and Mandatory Spare Parts Supplied from Within the Employer's Country		
3.b	Civil Works		
Substation TOTAL to be carried forward to Grand Summary			

Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 4.c: Substation-3

Schedule No.	Title	Total Price	
		Foreign Currency	Local Currency
1.c	Plant and Mandatory Spare Parts Supplied from Abroad		
2.c	Plant and Mandatory Spare Parts Supplied from Within the Employer's Country		
3.c	Civil Works		
Substation TOTAL to be carried forward to Grand Summary			

Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 4.d: Substation-4

Schedule No.	Title	Total Price	
		Foreign Currency	Local Currency
1.d	Plant and Mandatory Spare Parts Supplied from Abroad		
2.d	Plant and Mandatory Spare Parts Supplied from Within the Employer's Country		
3.d	Civil Works		
Substation TOTAL to be carried forward to Grand Summary			

Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 5 - Grand Summary

Schedule No.	Title	Total Price	
		Foreign Currency	Local Currency
4.a	Substation-1		
4.b	Substation-2		
4.c	Substation-3		
4.d	Substation-4		
GRAND TOTAL to be carried forward to Form PG5A-1b			

Note: 1. Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies
2. Create additional columns for up to a maximum of 3 Foreign Currencies if so required

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Schedule No. 6 - Supplier-recommended spare parts

Item	Description	Qty	Unit Price		Total Price	
			EXW Local Parts Local Currency	CIP Imported Parts Foreign Currency	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6 = 3 x 4	7 = 3 x 5
TOTAL						

Note: 1. ***Specify currencies in accordance with ITT 27. Create and use as many columns for Unit Price and Total Price as there are currencies***

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorized to sign the Tender for and on behalf of the Tenderer		

Technical Proposal (Form PG5A-4)

[The Revised Technical Proposal, if any, shall follow the same format and structure]

Site Organization

Method Statement

Mobilization Structure

Construction Structure

Plant

Safety Plan

Personnel

Equipment

Proposed subcontractors for Major Items of Plant and Services

Time Schedule

Site Organization

[insert technical proposal for site organization]

[The Tenderer shall include in the tender an appropriate organization chart. This shall include
head office as well as site components and clearly demonstrate that the Tenderer possesses the
staff and organizational resources to complete the Supply and Installation of Plant & Equipment.]

Method Statement

[insert technical proposal for Method Statement]

[The Tenderer shall furnish an overall description covering all activities and processes from inception to site works and commissioning.
In particular methods of minimizing the impact on the environment in accordance with the relevant laws and regulations during the construction phase shall be described.]

Mobilization Schedule

[insert technical proposal for Mobilization Schedule]

[This shall be included in the overall time schedule to be provided by the Tenderer as per "Time Schedule" in Section 5.Tendering Forms

Construction Schedule

[insert technical proposal for Construction Schedule]

[This shall be included in the overall time schedule to be provided by the Tenderer as per "Time Schedule" in Section5. Tendering Forms]

Plant

*[insert technical proposal for **Plant**]*

[The Tenderer shall provide the plant and equipment it intends to use in the construction process to demonstrate that it has the capability to complete the Supply and Installation of Plant & Equipment.]

Safety Plan

*[insert technical proposal for **Safety Plan**]*

[The Tenderer shall demonstrate that it has a comprehensive safety system that will be used during the construction and installation phase. This system shall meet all safety requirements in accordance with all relevant laws, rules and regulations.]

Personnel Information

[This Form should be completed for each person proposed by the Tenderer on Form PG5A-2a& PG5A-2b, where applicable]

Invitation for Tender No:	*[indicate IFT No]*
Tender Package No	*[indicate Package No]*
This Package is divided into the following Number of Lots	*[indicate number of Lot(s)]*

A.	**Proposed Position** (tick the relevant box)		
B.	**Personal Data**		
Name			
Date of Birth			
Years overall experience			
Years of specific experience			
National ID Number			
Years of employment with the Tenderer			
B. Professional Qualifications: 1. 2.			
C.	**Present Employment** *[to be completed only if not employed by the Tenderer]*		
Name of Procuring Entity:			
Address of Procuring Entity:			
Present Job Title:			
Years with present Procuring Entity:			
Tel No:	Fax No:	e-mail address:	
Contact *[manager/personnel officer]:*			

D.	**Professional Experience**		
Summarise professional experience over the last twenty years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.			
	From	To	Company / Project / Position / Relevant technical and management experience.
1			
2			
3			

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Equipment Information

[The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in TDS . A Separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer]

Invitation for Tender No:	*[indicate IFT No]*
Tender Package No	*[indicate Package No]*
This Package is divided into the following Number of Lots	*[indicate number of Lot(s)]*

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Tenderer.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

Name:	*[insert full name of signatory]*	*Signature with Date and Seal*
In the capacity of:	*[insert designation of signatory]*	*[Sign]*
Duly authorised to sign the Tender for and on behalf of the Tenderer		

Proposed Subcontractors for Major Items of Plant and Installation Services

A list of major items of Plant and Installation Services is provided below.

The following Subcontractors and/or manufacturers are proposed for carrying out the item of
the facilities indicated. Tenderers are free to propose more than one for each item

Major Items of Plant and Installation Services	**Proposed Subcontractors/Manufacturers**	**Nationality**

Form Functional Guarantee

The Tenderer shall copy in the left column of the table below, the identification of each functional
guarantee required in the Specification and stated by the Employer in ITT 24(n) and in the right column, provide the corresponding value for each functional guarantee of the proposed plant and equipment.

Invitation for Tender No:	*[indicate IFT No]*
Tender Package No	*[indicate Package No]*
This Package is divided into the following Number of Lots	*[indicate number of ot(s)]*

Required Functional Guarantee	**Value of Functional Guarantee of the Proposed Plant and Equipment**
1.	
2.	
3.	
4.	
5.	
6.	

Specifications Submission and Compliance Sheet (Form PG5A-4a)

Invitation for Tender No: Date:
Tender Package No: Package Description: *[enter description as specified in Section 6]*
Tender Lot No: Lot Description: *[enter description as specified in Section 6]*

Item No.	Name of Goods or Related Service	Country of Origin	Make and Model (*when applicable)*	Full Technical Specifications and Standards
1	**2**	3	4	5
	FOR GOODS			Note 1
	FOR RELATED SERVICES			

[The Tenderer should complete all the columns as required]

Signature:	*[insert signature of authorised representative of the Tenderer]*
Name:	*[insert full name of signatory with National ID]*
In the capacity of:	*[insert designation of signatory]*
Duly authorised to sign the Tender for and on behalf of the Tenderer	

Manufacturer's Authorisation Letter (Form PG5A - 5)

[The Tenderer shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. Thisletter 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 Tenderer shall include it in its tender, if so indicated in the ***TDS as stated under ITT Sub-Clause29.1(b)****]*

Invitation for Tender No:	Date:
Tender Package No:	
Tender Lot No:	
To: Name and address of Employer]	

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 Tenderer]* to supply the following Plant and Equipment, manufactured by us *[insert name and or brief description of the Goods]*.

We hereby extend our full guarantee and warranty as stated underGCCClause 42 of the General Conditions of Contract, with respect to the Goods offered by the above Tenderer.

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

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*
Address: *[insert full address including Fax and e-mail]*
Title: *[insert title]*

Date: *[insert date of signing]*

Bank Guarantee for Tender Security (Form PG5A– 6)

[this is the format for the Tender Security to be issued by a scheduled bank of Bangladesh as stated under ITT Clauses32 and 33]

Invitation for Tender No: Date:

Tender Package No:

Tender Lot No:
To:
[Name and address of Employer]

TENDER GUARANTEE No:

We have been informed that *[insert name of Tenderer]* (hereinafter called "the Tenderer") intends to submit to you its Tender dated *[insert date of Tender]* (hereinafter called "the Tender") for the supply and installation of *[description of plant and services]* under the above Invitation for Tenders (hereinafter called "the IFT").

Furthermore, we understand that, according to your conditions, Tenders must be supported by a Bank Guarantee for Tender Security .

At the request of the Tenderer, we *[insert name of bank]* hereby irrevocably and unconditionally undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk.*[insert amount in figures and in words]* upon receipt by us of your first written demand accompanied by a written statement that the Tenderer is in breach of its obligation(s) under the Tender conditions, because the Tenderer:

a. has withdrawn its Tender after opening of Tenders but within the validity of the Tender Security ; or
b. refused to accept the Notification of Award (NOA) within the period as stated under Instructions to Tenderers (ITT) ; or
c. failed to furnish Performance Security within the period as stipulated in the NOA; or
d. refused to sign the Contract Agreement by the time specified in the NOA; or
e. did not accept the correction of the Tender price following the correction of the arithmetic errors in accordance with the ITT; or

This guarantee will expire:

(a) if the Tenderer is the successful Tenderer, upon our receipt of a copies of the contract signed by the Tenderer and the Performance Security issued to you in accordance with the ITT; or

(b) if the Tenderer is not the successful Tenderer,twenty eight (28) days after the expiration of the Tenderer's Tender validity period, being [*date of expiration of the Tender validity plus twenty eight(28) days]*

Consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Letter of Commitment for Bank's undertaking for Line of Credit (Form PG5A-6a)

*[This is the format for the Credit Line to be issued by any scheduled Bank of Bangladesh **without any alternation/edit/condition** in accordance with ITT Clause 15.1(b)]*

Invitation for Tender No: Date:

Tender Package No:

Lot No (*when applicable*)
To:

[*Name and address of the Procuring Entity*]

CREDIT COMMITTMENT No: [insert number]

We have been informed that *[name of Tenderer]* (hereinafter called "the Tenderer") intends to submit to you its Tender (hereinafter called "the Tender") for the execution of the Supply and Installation of Plant & Equipment of *[description of works]* under the above Invitation for Tenders (hereinafter called "the IFT").

Furthermore, we understand that, according to your conditions, the Tenderer's Financial Capacity i.e. Liquid Asset must be substantiated by a Letter of Commitment of Bank's Undertaking for Line of Credit.

At the request of, and arrangement with, the Tenderer, we *[name and address of the Bank]* do hereby agree and undertake that [*name and address of the Tenderer*] will be provided by us with a revolving line of credit, in case awarded the Contract, for execution of the Works viz. [*insert name of works*], for an amount not less than BDT [*in figure*](*in words*) for the sole purpose of the execution of the above Contract. This Revolving Line of Credit will be maintained by us until issuance of "**Taking-Over Certificate**" by the Procuring Entity.

In witness whereof, authorised representative of the Bank has hereunto signed and sealed this Letter of Commitment.

Signature Signature

Notification of Award (Form PG5A - 7)

Contract No: Date:
To:

[Name of Contractor]

This is to notify you that your Tender dated *[insert date]* for the supply and installation of plant and Services for *[name of contract]* for the Contract Price of *[state amount in figures and in words]* as corrected and modified in accordance with the Instructions to Tenderers, has been approved by *[name of Employer].*

You are thus requested to take following actions:

i. accept in writing the Notification of Award within seven (7) working days of its issuance pursuant to ITT Sub-Clause 64.1

ii. furnish a Performance Security in the specified format and in the amount of Tk.*[state amount in figures and words]* ,within Twenty-eight (28) days from issue of this Notification of Award but not later than *(specify date),* in accordance with ITT Clause 64.3

iii. sign the Contract within twenty eight (28) days of issuance of this Notification of Award but not later than *(specify date),* in accordance with ITT Clause 69.2

You may proceed with the execution of the supply of Plant and Services only upon completion of the above tasks. You may also please note that this Notification of Award shall constitute the formation of this Contract, which shall become binding upon you.

We attach the draft Contract and all other documents for your perusal and signature.

Signed

Duly authorised to sign for and on behalf of *[name of Employer]*

Date:

Contract Agreement (Form PG5A - 8)

THIS AGREEMENT made the *[day]* day of *[month][year]* between *[name and address of Employer]* (hereinafter called "the Employer") of the one part and *[name and address of* Contractor*]* (hereinafter called "the Contractor") of the other part:

WHEREAS the Employer invited Tenders for certain plant and services, viz, *[brief description of plant and services]* and has accepted a Tender by the Contractor for the supply of those plant and services in the sum of Taka *[Contract Price in figures and in words]* (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereafter referred to.
2. The following documents forming the Contract shall be in the following order of precedence, namely :
    - (a) the signed Form of Contract Agreement;
    - (b) the Notification of Award
    - (c) The Tender and the appendices to the Tender
    - (d) Particular Conditions of Contract;
    - (e) General Conditions of Contract;
    - (f) Technical Specifications;
    - (g) Drawings;
    - (h) Price Schedules of Plant and Equipment and;
    - (i) other document including correspondences listed in the PCC forming part of the Contract

3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to provide the plants and related services and to remedy any defects therein in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay the Contractor in consideration of the provision of the plant 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.

5. The Appendices listed in the attached List of Appendices shall be deemed to form an integral part of this Contract Agreement. Reference in the Contract to any Appendix shall mean the Appendices attached hereto, and the Contract shall be read and construed accordingly.

IN WITNESS whereof the Employer and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives in accordance with the laws of Bangladesh on the day, month and year first written above.

Signed by, for and on behalf of the Employer

For the Employer: **For the Contractor:**

Signature

Print Name

Title

In the presence
of Name
Address

Bank Guarantee for Performance Security (Form PG5A – 9)

*[This is the format for the Performance Security to be issued by **an internationally reputable bank and it shall have correspondent bank located in Bangladesh, to make it enforceable**in accordance with ITT Sub-Clause 67.1pursuant to Rule 27(4) of the Public Procurement Rules, 2008.]*

Contract No: Date:

To:

[Name and address of Employer]

PERFORMANCE GUARANTEE No: *[insert Performance Guarantee number]*

We have been informed that *[name of* Contractor*]* (hereinafter called "the Contractor") has undertaken, pursuant to Contract No *[reference number of Contract]* dated *[date of Contract]* (hereinafter called "the Contract") for the supply and installation of *[description of plant and services]* under the Contract.

Furthermore, we understand that, according to your conditions, Contracts must be supported by a performance guarantee.

At the request of the Contractor, we *[name of bank]* hereby irrevocably and unconditionally undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk.*[insert amount in figures and in words]* upon receipt by us of your first written demand accompanied by a written statement that the Supplier is in breach of its obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

This guarantee is valid until *[date of validity of guarantee]*, consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

[Signatures of authorized representatives of the bank]

Signature Seal

Bank Guarantee for Advance Payment (Form PG5A – 10)

*[this is the format for the Advance Payment Security to be issued by **an internationally reputable bank and it shall have correspondent bank located in Bangladesh, to make it enforceable** in accordance with GCC Clause 57.1]*

Contract No: Date:

To:

[Name and address of Employer]

ADVANCE PAYMENT GUARANTEE No.:

We have been informed that *[name of* Contractor*]* (hereinafter called "the Contractor") has undertaken, pursuant to Contract No *[reference number of Contract]* dated *[date of Contract]* (hereinafter called "the Contract") for the supply and installation of *[description of plant and services]* under the Contract.

Furthermore, we understand that, according to your Particular Conditions of Contract Clause 26.1, Advance Payment(s) on Contracts must be supported by a bank guarantee.

At the request of the Contractor, we *[name of bank]* hereby irrevocably unconditionally undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Tk.*[insert amount in figures and in words]* upon receipt by us of your first written demand accompanied by a written statement that the Contractor is in breach of its obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

We further agree that no change, addition or other modification of the terms of the Contract to be performed, or of any of the Contract documents which may be made between the Employer and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee is valid until *[date of validity of guarantee]*, consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

[Signatures of authorized representatives of the bank]

Signature Seal

Bank Guarantee for Retention Money Security (Form PG5A-11)

[This is the format for the Retention Money Guarantee to be issued by any scheduled Bank of Bangladesh in accordance with GCC Clause 57]

Demand Guarantee

[Bank's Name, and Address of Issuing Branch or Office]

Beneficiary: [insert Name and Address of the Procuring Entity]

Date: [insert date]

RETENTION MONEY GUARANTEE No.: [insert number]

We have been informed that [insert name of Contractor] (hereinafter called "the Contractor") has entered into Contract Number [insert reference number of the Contract] dated [insert date] with you, for the execution of [insert name of Contract and brief description of Works] (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, when the Taking-Over Certificate has been issued for the Works and the first half of the Retention Money has been certified for payment, payment of Tk. [insert the amount of the second half of the Retention Money] which becomes due after the Defects Liability Period has passed and certified in the form of Defects Correction Certificate, is to be made against a Retention Money Guarantee.

At the request of the Contractor, we [insert name of Bank] hereby irrevocably unconditionally undertake to pay you any sum or sums not exceeding in total an amount of Tk. [insert amount in figures] (Taka [insert amount in words]) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor failed to properly correct the defects duly notified in respect of the Supply and Installation of Plant & Equipment.

It is a condition for any claim and payment under this guarantee to be made that the payment of the second half of the Retention Money referred to above must have been received by the Contractor on its account number[insert A/C no] at [name and address of Bank].

This guarantee is valid until [insert the date of validity of Guarantee that being twenty-eight (28) days beyond the Defects Liability Period]. Consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Warranty Certificate (Form PG5A - 12)

[The Tenderer shall require to fill in this Form in accordance with the instructions indicated. This Certificate should be on the official pad of the Tenderer and should be signed by a person with the proper authority to sign documents]

Invitation for Tender No: Date:
Tender Package No:

Tender Lot No (if applicable):

To:
Name and address of Purchaser]

WHEREAS

We [insert complete name of Tenderer],

who are authorized Supplier of [insert type of goods to be supplied], having registered office at [insert full address of Tenderer's office], do hereby warrant that all the Goods under this tender will be supplied by us and extend our full guarantee and warranty as stated under GCC Clause 42 of the General Conditions of Contract, for the Goods offered by us under this tender.

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

Name: [insert complete name(s) of authorized representative(s) of the Tenderer]
Address: [insert full address including Fax and e-mail]
Title: [insert title]
Date: [insert date of signing]

Section 6. Scope of Work

6.1 Scope of Supply of Plant and Installation Services by the Contractor

General:

The works covered by the Bid/Tender is Design, supply, erection, installation, testing and commissioning and inspection of 04 (Four) nos. New 33/11 KV, 1X10/13.33 MVA AIS Substation at BSCIC Industrial Park, Sirajganj including Civil works and other related works on Turnkey Basis under NESCO Ltd., Rajshahi.

The scope of plant and services include design, manufacture, quality assurance, inspection & testing, packing for export, insurance & shipment to site, complete construction & installation, jointing, terminating, bonding, earthing, painting, transportation, setting to work, site testing & commissioning of all the equipment necessary for operation of the sub-stations along with having the full responsibility for civil works including design and construction of transformer foundations and control building etc.

The detail requirement is listed in the technical specification and Guaranteed Technical particulars (GTP) in the tender document.

The contractor is responsible for ensuring that all and any items of work required for the safe, efficient and satisfactory completion and functioning of the works, landscaping of the substation area are included in the Bid price whether they will be described in the specification or not.

Moreover, the contractor shall be responsible for Transportation of machineries/equipment to the Project Site including moving the equipment and materials from the designated store as per site requirement and Consignee's advice. All the consumables goods or any equipment/machineries/ materials are required to complete the Plant & Equipment and services shall be responsibilities of the contractor and all the necessary arrangement for Power, Water, accommodations or any such facilities and tools-tackles, necessary instruments required for erection, installation, testing and commissioning will be supplied/arranged by the contractor within the quoted price. The contractor shall handover all the removable materials/goods at the place within layout plan as instructed by the consignee.

6.1.1 Design, Supply, Erection, Installation, Testing and Commissioning of 33/11KV, 1x10/13.33 MVA AIS Sub-Station (Substation-1) at BSCIC Industrial Park, Sirajganj under NESCO Ltd., Rajshahi.

(Not limited but at least the following works to be done by the turnkey contractor)

A. CIVIL & BUILDING WORKS (Substation-1):

Design, Manufacture, Supply, Installation/ Erection, Construction, Testing and commissioning and so on of the following works are the scope of works:

1) Land development work with height of 0.6 (zero point six) Meter above the highest flood level or 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Employer will provide all lands only and contractor will fill it by sand **(mandatory)**. Soil testing for soil resistivity and soil bearing capacity before designing, final leveling, consolidation, surfacing and compaction of entire switchyard area with crushed rock (where required) to cater for the ultimate development of the substation. **The area to be developed for substation construction is 45x35 sq meter.**

Note: Although the land has been already filled by sand, the contractor will have to fill it further by sand as per above requirement.

2) Landscaping work and gardening of the whole sub-station area. Bidder shall submit the layout of the whole substation area of landscaping work for approval.

3) Construction of cable trenches for power cable and control cable:

(a) Within the switchyard area
(b) Switch yard area to control room building
(c) Control room building to 11kV feeder poles [Location of 11kV terminal pole will be within 100 meter from the control room building].

4) Retaining wall (one meter height) which covers 45x35 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 35 meter length).

5) Construction of main entrance gate and side gate.

6) Construction of R.C.C foundations for **1 nos. of 20/26.67 MVA power transformers**, switch yard tower, circuit breaker, current transformer and all others equipment & Structure as required.

Power Transformer to be supplied for this substation is of 10/13.33 MVA capacity. Considering future requirement foundation will be constructed for 20/26.66 MVA power transformer.

7) Construction of 300 square meter complete two storied Control room building (150 square meter each Floor) **with three storied foundation**. For Control room building - the Cable Trench space, Store Room, Security Space, shall be installed in the Ground floor level (Clear Height 9'-6"); Control room, Battery Room, Toilet shall be installed in the 1st floor level (Clear Height 13'-6").

8) Properly insulated False Ceiling of Control room (1st floor only) suitable for Air conditioning system.

9) Construction of drainage and sanitary system for control room and whole sub-station area.

10) Supply and installation of Operation Key Board, Al/ Steel frame front cover glass with locking device, dust proof.

11) Construction of approach road from the main gate to the switchyard & Control Room entrance and internal road for whole sub-station area and parking area as required. The width of all the roads will be sufficient enough for transportation of all the substation equipment e.g., power transformer, PCM panel etc.
The approach road from the main gate to the switchyard will have minimum slope possible.

12) Supply of gravel and finishing the Switchyard surface by the gravel

13) Supply and installation of Switchyard Chain link fencing with gate and **Peripheral Chain link fencing which covers a 105x72 square meter of land with gates.**

14) Construction of septic tank, soak well, inspections pits, sewerage piping by PVC 6 inches dia. Pipe, toilet/ bathroom / lavatory located in the control room building having facilities of wash basin, bath shower towel rod, soap case, auzo wash, glass rack, looking mirror, pan fitting with low-down, swan neck pillar cock, extra long bib cock, interior walls and floor (**whole 1st floor**) finished by tiles etc. complete in all respect.

15) Supply and installation of the following:

Overhead water tank on the top of the control room building, underground water reservoir (tank), water lifting pump, suction pump and portable water supply system complete in all respect [Design shall be based on use of 5 persons per day for overhead water tank].

16) Supply and installation of Wall clock for Operator use, about 12 - 16 inches Dia Dial plate, pointer type, English numerical type but not LCD display Digital type, Quartz.

17) Supply of Operator working table, Steel made, with extra glass on the top, and two nos. of wheel based revolving chair, two number of guest chair, curtain (venetian blind) of window in the control room.

18) Supply of Steel File Cabinet (four drawers), Steel Almirah for record keeping in the control room.

19) Construction/ installation of Substation NAME PLATE/ SIGN BOARD - one no., switching scheme MIMIC Display board - one no. Made of steel/aluminum frame on hard plastic/ at least two mm thick ebonite sheet, white color body

20) Supply and construction of Power cable trench and control cable rack inside the ground floor of the control room building. Proper sealing of the cable entry (control & Power) at Control Room building, to prevent water entering from switch yard/outside to CR Building, preventing entry of rats and reptiles, Fire proof etc.

21) Supply and Installation of Yard Lighting (LED) & Emergency Lighting (LED). All the light fittings shall be LED type & these fittings shall be mounted on switch yard portal structures such as columns & beams. No separate lighting mast is required. Entire substation lighting system in the

switch yard shall be designed using underground cables only. No over head conductors are permitted for this purpose. For street lighting one outdoor lighting kiosk with two incomers of 200A rating switch fuse units (SFU) & with six feeders of 32A rating fitted with MCB shall be considered. Lighting within the switchyard must be designed as per relevant IEC standard to achieve the following minimum lighting levels:

- Minimum 20 lux within the main working areas;
- Minimum 60 lux at major plant items including marshalling boxes and control cubicles

22) Switchyard lighting must consist of weather proof LED floodlights and switched from inside the building. Floodlights should be a suitable high quality, energy efficient light installed at 45-60 degrees or an angle suitable to maximize the effectiveness of the light. Lighting poles must be Hot Dipped Galvanized and hinged at the base or mid-way up the pole to ensure maintenance is capable of being performed at ground level without the use of ladders or elevated work platforms. The design must check swing down or hinged poles with the proximity to HV equipment to ensure exclusion zones are not encroached when performing floodlight maintenance.

23) Supply and installation of decorative LED street lighting for connecting road (if any) after every 10 meter interval (distance). LED Street lighting have the feature of Multiple Mounting Options Available, Rugged Precision Cast Aluminum Housing, Perforated Air Flow Venting, High Surface Area Extruded Aluminum Heat Sinks, High Output White LED Diode, Decorative Lens Cover Seals the Electrical/Optical Chamber to IP66, Electronic Driver. The pole shall be stylish, non-corrosive, easy to install and have longer service life.

NOTE: All doors & windows work to be finished by aluminum frame and high quality transparent 6 mm thick glasses. Both indoor & outdoor surface finishing works of walls, roof etc, to be synthetic high quality plastic paint and moisture proof snowcem respectively and treatment to be made by lime terracing for rain water leakage proof of the roof.

B. SUB-STATION / ELECTRICAL WORKS (Substation-1):

Design, Manufacture, Supply, Installation/ Erection, Construction, Testing and Commissioning etc. of the following works are the scope of works:

1) Supply and installation of one (01) nos. 33kV transformer Feeders comprising: 33kV Circuit Breaker, CT, DS, LA, Control cable, Cable termination kit, PCM Panels, Supporting structures etc. complete in all respect.

2) Supply and installation of three (03) nos. 33kV Line Feeder comprising: 33kV Circuit Breaker, LA, DS, CT, Control cable, Cable termination kit, PCM Panels, Supporting structures etc.

3) Supply and installation of Station use Auxiliary transformer 200 KVA, 33/0.415 KV, ONAN, Dyn-11 including 33kV gang operated fuse isolator with fuse, 0.415 kV MCCB, power cable, cable terminating kits with structures, etc. complete in all respect.

4) Supply and installation of one nos. 33/11 kV, 10/13.33 MVA Power transformer, Dyn11, with. 33kV Feeder comprising: Circuit Breaker, CT, LA, DS, 11kV Power cable, Control cable, cable terminating kits and supporting structures etc. complete in all respect. Necessary accessories for Power Transformer to be supplied as per field requirement.

5) Supply and installation of 33kV Bus Potential Transformer of ratio

33kV	110V	110 V
√3	√3	√3

two set (three nos. in one set), to be installed on the switch yard gantry structure.

6) Supply and installation of Switch yard shielding materials.

7) Supply and installation of Switch yard grounding materials for whole sub-station area and equipment to be installed. Earth resistance of the substation shall be less than 0.5 ohm.

8) Supply and installation of Switchyard outdoor illumination system.

9) Supply and installation of 33kV Sectionalizing Bus Isolator, gang operated, horizontal mounting, vertical break, without earthing blade to be installed on the top of the middle portion of the switchyard gantry structure.

10) Supply and installation of 33 kV Bus bar Conductor ACSR Martin.

11) Supporting steel column structure for connecting the 11kV XLPE Power Cable with accessories as required.

12) Supply and installation of 33kV switchyard gantry structure of three (03) diameters (Each 5M×5M) with bus bar, bus support insulator & hardware, jumper, shielding materials and grounding materials etc. complete in all respect.

13) Supply and installation of Control room indoor illumination.

14) Supply and installation of Emergency lighting.

15) **Supply and installation of Fire Fighting equipment / system.**

16) Supply and installation of Exhaust Fan (One no. in battery room).

17) Supply and installation of Split type Air cooler (**Country of origin- South Korea, Malaysia**) (At least Forty eight thousand BTU per hr. capacity including MCB, switch, male female plug socket complete) - 3 nos. in 11kV SWITCHGEAR panel room and 33kV protection, control & metering panel room.

18) Supply and installation of Control-Relay Panels for 33kV power transformer & line feeders of the proposed 33kV & 11KV Circuits to be installed in the control room building.

19) Supply and installation of AC Distribution Panel, DC Distribution Panel with interlocking facilities

20) Supply and installation of Separate AC distribution Box, wall mounting for control room internal

& external illumination switching, extra power supply arrangement for testing purpose, different operation and maintenance use.

21) Supply and installation of switching boards to be installed in each room for functioning of fans, lights, Air cooler etc.

22) Supply and installation of 11kV SWITCHGEAR comprising:

Incoming from 33/11kV Power transformer (1600A) : 01 (one) nos.
Out-going feeder Breaker (630A) : 03 (three) nos.

11kV Potential transformer having ratio of

11kV	110V	110V
√3	√3	√3

complete in top mounted on the transformer incoming breaker panel.

23) Supply and installation/ connection of 11kV Power Cable, XLPE, but not PVC/ PILC for all 11kV line feeders and transformers feeder including cable termination (Outdoor & Indoor) as required.

23.1) Installation (not supply) of 11 KV Line isolator. (11 KV Line isolator will be supplied from NESCO Ltd. **and hence it shall not be included in the price schedule)**

24) Supply and installation/ connection of Control Cables

25) Supply and installation of Battery, Ni-Cd

26) Supply and installation of Battery Charger

27) Supply and lying of Rubber pad to be laid in front of the 11kV SWITCHGEAR Panels.

28) Supply and installation of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing up to Commissioning as per approved design & drawing and instruction of Engineer-in -charge /Employer.
(As per technical specifications mentioned in 7.1.28).

29) 6 (Six) sets of As-built drawings together with operation and maintenance manual, relevant IEC standards of the installed equipment shall be submitted for the Superintending Engineer of Design & Inspection, NESCO Ltd., Rajshahi. **One electronic copy (soft copy in a CD, drawings with AutoCAD softcopy format) of all relevant As-built drawings together with operation and maintenance manual, relevant IEC standards of the installed equipment shall be submitted for the the Superintending Engineer of Design & Inspection, NESCO Ltd., Rajshahi.**

30) **The Bidder must visit the site and assess the works before tender submission.**

31) Contractor shall supply and install digital electronic sign board and complete furniture for the substation control room.

32) Transportation of all equipment and materials, all installations, connections and testing, commissioning, inspection are within the scope of the Bid.

33) List of mandatory spare parts (Items in the list must be of same model & manufacturer as supplied main equipment):

Sl. No.	Description	Unit	NESCO's Requirement
1.	**Tripping coil**		
	33 KV VCB	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
2.	**Closing coil**		
	33 KV VCB	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
3.	**Charging Motor**		
	33 KV VCB	Nos	1
	11 KV incoming	Nos	1
4.	**Master Tripping Relay**		
	33 KV VCB Panel	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
	Auxiliary Relay for Transformer Panel	Nos	1
5.	**Trip Circuit supervision Relay**		
	33 KV VCB PCM Panel	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
6.	**Overcurrent & Earth fault relay**		
	33 KV VCB PCM Panel	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
7.	**Annunciator**		
	33 KV VCB PCM Panel	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1

Single line diagram in Annex-1

C. Design and Drawings (Substation-1):

1. Single Line Diagram of Sub-station.
2. Site Layout Plan and arrangement drawings of each Sub-station
3. Proposed lay-down area for construction purpose.
4. **Detailed soil investigation program & soil test report**
5. Civil (Building and others) Drawing.
6. All drawings and design as per Section 7 (architectural, foundation and superstructure)

7. Installation drawings, layout, grounding/earthing design, Lightning protection, lay out of fire protection etc.
8. All detail Specification, GTP, General Arrangement, Electrical, Mechanical, Dimensional, Cross-Sectional, Connection Drawing for equipment described in Price Schedule.
9. As Built Drawings.
10. Others as required.
11. All drawings will be to be submitted hardcopy, softcopy & AutoCAD softcopy format.
12. Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc, along with Outline, Dimensional, Cross-sectional & General arrangement drawings, Installation diagram, printed catalogue describing the type/ model of offered every equipment shall be submitted to the Superintending Engineer, Design & Inspection, NESCO Ltd., Rajshahi by the Bidder. The submitted Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc must be approved by Design & Inspectoin, NESCO Ltd, Rajshahi prior to the manufacturing of the goods.
13. The Bidder shall have to submit 3 (three) sets of the same for Approval within 15 days from the date of signing Contract. The bidder shall also submit one set reproducible tracing of the above drawings in soft format.

6.1.2 Design, Supply, Erection, Installation, Testing and Commissioning of 33/11KV, 1x10/13.33 MVA AIS Sub-Station (Substation-2) at BSCIC Industrial Park, Sirajganj under NESCO Ltd., Rajshahi.

(Not limited but at least the following works to be done by the turnkey contractor)

A. CIVIL & BUILDING WORKS (Substation-2):

Design, Manufacture, Supply, Installation/ Erection, Construction, Testing and commissioning and so on of the following works are the scope of works:

1) Land development work with height of 0.6 (zero point six) Meter above the highest flood level or 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Employer will provide all lands (area shown in the attached figure) only and contractor will fill it by sand **(mandatory)**. Soil testing for soil resistivity and soil bearing capacity before designing, final leveling, consolidation, surfacing and compaction of entire switchyard area with crushed rock (where required) to cater for the ultimate development of the substation. The area to be developed for substation construction is 45x35 sq meter.

Note: Although the land has been already filled by sand, the contractor will have to fill it by sand again as per above requirement.

2) Landscaping work and gardening of the whole sub-station area. Bidder shall submit the layout of the whole substation area of landscaping work for approval.

3) Construction of cable trenches for power cable and control cable:

(a) Within the switch yard area
(b) Switch yard area to control room building
(c) Control room building to 11kV feeder poles [Location of 11kV terminal pole will be within 100 meter from the control room building].

4) Construction of Retaining wall (one meter height) which covers 45x35 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 35 meter length).

5) Construction of main entrance gate and side gate.

6) Construction of R.C.C foundations for **1 nos. of 20/26.67 MVA power transformers** , switch yard tower, circuit breaker, current transformer and all others equipment & Structure as required.
Power Transformer to be supplied for this substation is of 10/13.33 MVA capacity. Considering future requirement foundation will be constructed for 20/26.66 MVA power transformer.

7) Construction of 300 square meter complete two storied Control room building (150 square meter each Floor) **with three storied foundation**. For Control room building - the Cable Trench space, Store Room, Security Space, shall be installed in the Ground floor level (Clear Height 9'-6"); Control room, Battery Room, Toilet shall be installed in the 1st floor level (Clear Height 13'-6").

8) Properly insulated False Ceiling of Control room (1st floor only) suitable for Air conditioning system.

9) Construction of drainage and sanitary system for control room and whole sub-station area.

10) Supply and installation of Operation Key Board, Al/ Steel frame front cover glass with locking device, dust proof.

11) Construction of approach road from the main gate to the switchyard & Control Room entrance and internal road for whole sub-station area and parking area as required. The width of all the roads will be sufficient enough for transportation of all the substation equipment e.g., power transformer, PCM panel etc.
The approach road from the main gate to the switchyard will have minimum slope possible.

12) Supply of gravel and finishing the Switchyard surface by the gravel.

13) Supply and installation of Switchyard Chain link fencing with gate and **Peripheral Chain link fencing which covers a 71x52 square meter of land with gates.**

14) Construction of septic tank, soak well, inspections pits, sewerage piping by PVC 6 inches dia. Pipe, toilet/ bathroom / lavatory located in the control room building having facilities of wash basin, bath shower towel rod, soap case, auzo wash, glass rack, looking mirror, pan fitting with low-down, swan neck pillar cock, extra long bib cock, interior walls and floor (**whole 1st floor**) finished by tiles etc. complete in all respect.

15) Supply and installation of the following:

Overhead water tank on the top of the control room building, underground water reservoir (tank), water lifting pump, suction pump and portable water supply system complete in all respect [Design shall be based on use of 5 persons per day for overhead water tank].

16) Supply and installation of Wall clock for Operator use, about 12 - 16 inches Dia Dial plate, pointer type, English numerical type but not LCD display Digital type, Quartz.

17) Supply of Operator working table, Steel made, with extra glass on the top, and two nos. of wheel based revolving chair, two number of guest chair, curtain (venetian blind) of window in the control room.

18) Supply of Steel File Cabinet (four drawers), Steel Almirah for record keeping in the control room.

19) Construction/ installation of Substation NAME PLATE/ SIGN BOARD - one no., switching scheme MIMIC Display board - one no. Made of steel/aluminum frame on hard plastic/ at least two mm thick ebonite sheet, white color body

20) Supply and construction of Power cable trench and control cable rack inside the ground floor of the control room building. Proper sealing of the cable entry (control & Power) at Control Room building, to prevent water entering from switch yard/outside to CR Building, preventing entry of rats and reptiles, Fire proof etc.

21) Supply and Installation of Yard Lighting (LED) & Emergency Lighting (LED). All the light fittings shall be LED type & these fittings shall be mounted on switch yard portal structures such as columns & beams. No separate lighting mast is required. Entire substation lighting system in the switch yard shall be designed using underground cables only. No over head conductors are permitted for this purpose. For street lighting one outdoor lighting kiosk with two incomers of 200A rating switch fuse units (SFU) & with six feeders of 32A rating fitted with MCB shall be considered. Lighting within the switchyard must be designed as per relevant IEC standard to achieve the following minimum lighting levels:

- Minimum 20 lux within the main working areas;
- Minimum 60 lux at major plant items including marshalling boxes and control cubicles

22) Switchyard lighting must consist of weather proof LED floodlights and switched from inside the building. Floodlights should be a suitable high quality, energy efficient light installed at 45-60 degrees or an angle suitable to maximize the effectiveness of the light. Lighting poles must be Hot Dipped Galvanized and hinged at the base or mid-way up the pole to ensure maintenance is capable of being performed at ground level without the use of ladders or elevated work platforms. The design must check swing down or hinged poles with the proximity to HV equipment to ensure exclusion zones are not encroached when performing floodlight maintenance.

23) Supply and installation of decorative LED street lighting for connecting road (if any) after every 10 meter interval (distance). LED Street lighting have the feature of Multiple Mounting Options Available, Rugged Precision Cast Aluminum Housing, Perforated Air Flow Venting, High Surface Area Extruded Aluminum Heat Sinks, High Output White LED Diode, Decorative Lens Cover Seals the Electrical/Optical Chamber to IP66, Electronic Driver. The pole shall be stylish, non-corrosive, easy to install and have longer service life.

NOTE: All doors & windows work to be finished by aluminum frame and high quality transparent 6 mm thick glasses. Both indoor & outdoor surface finishing works of walls, roof etc, to be synthetic high quality plastic paint and moisture proof snowcem respectively and treatment to be made by lime terracing for rain water leakage proof of the roof.

B. SUB-STATION / ELECTRICAL WORKS (Substation-2):

Design, Manufacture, Supply, Installation/ Erection, Construction, Testing and Commissioning etc. of the following works are the scope of works:

1) Supply and installation of one (01) nos. 33kV transformer Feeders comprising: 33kV Circuit Breaker, CT, DS, LA, Control cable, Cable termination kit, PCM Panels, Supporting structures etc. complete in all respect.

2) Supply and installation of Three (03) nos. 33kV Line Feeder comprising: 33kV Circuit Breaker, LA, DS, CT, Control cable, Cable termination kit, PCM Panels, Supporting structures etc.

3) Supply and installation of Station use Auxiliary transformer 200 KVA, 33/0.415 KV, ONAN, Dyn-11 including 33kV gang operated fuse isolator with fuse, 0.415 kV MCCB, power cable, cable terminating kits with structures, etc. complete in all respect.

4) Supply and installation of one nos. 33/11 kV, 10/13.33 MVA Power transformer, Dyn11, with. 33kV Feeder comprising: Circuit Breaker, CT, LA, DS, 11kV Power cable, Control cable, cable terminating kits and supporting structures etc. complete in all respect. Necessary accessories for Power Transformer to be supplied as per field requirement.

5) Supply and installation of 33kV Bus Potential Transformer of ratio

33kV	110V	110 V
√3	√3	√3

two set (three nos. in one set), to be installed on the switch yard gantry structure.

6) Supply and installation of Switchyard shielding materials.

7) Supply and installation of Switchyard grounding materials for whole sub-station area and equipment to be installed. Earth resistance of the substation shall be less than 0.5 ohm.

8) Supply and installation of Switchyard outdoor illumination system.

9) Supply and installation of 33kV Sectionalizing Bus Isolator, gang operated, horizontal mounting, vertical break, without earthing blade to be installed on the top of the middle portion of the switchyard gantry structure.

10) Supply and installation of 33 kV Bus bar Conductor ACSR Martin.

11) Supporting steel column structure for connecting the 11kV XLPE Power Cable with accessories as required.

12) Supply and installation of 33kV switchyard gantry structure of three (03) diameters (Each 5M×5M) with bus bar, bus support insulator & hardware, jumper, shielding materials and grounding materials etc. complete in all respect.

13) Supply and installation of Control room indoor illumination.

14) Supply and installation of Emergency lighting.

15) **Supply and installation of Fire Fighting equipment / system**.

16) Supply and installation of Exhaust Fan (One no. in battery room).

17) Supply and installation of Split type Air cooler (**Country of origin- South Korea, Malaysia**) (At least Forty eight thousand BTU per hr. capacity including MCB, switch, male female plug socket complete) - 3 nos. in 11kV SWITCHGEAR panel room and 33kV protection, control & metering panel room.

18) Supply and installation of Control-Relay Panels for 33kV power transformer & line feeders of the proposed 33kV & 11KV Circuits to be installed in the control room building.

19) Supply and installation of AC Distribution Panel, DC Distribution Panel with interlocking facilities

20) Supply and installation of Separate AC distribution Box, wall mounting for control room internal & external illumination switching, extra power supply arrangement for testing purpose, different operation and maintenance use.

21) Supply and installation of switching boards to be installed in each room for functioning of fans, lights, Air cooler etc.

22) Supply and installation of 11kV SWITCHGEAR comprising:

Incoming from 33/11kV Power transformer (1600A) : 01 (one) nos.
Out-going feeder Breaker (630A) : 03 (three) nos.

11kV Potential transformer having ratio of

11kV	110V	110V
√3	√3	√3

complete in top mounted on the transformer incoming breaker panel.

23) Supply and installation/ connection of 11kV Power Cable, XLPE, but not PVC/ PILC for all 11kV line feeders and transformers feeder including cable termination (Outdoor & Indoor) as required.

23.1) Installation (not supply) of 11 KV Line isolator. (11 KV Line isolator will be supplied from NESCO Ltd. **and hence it shall not be included in the price schedule)**

24) Supply and installation/ connection of Control Cables

25) Supply and installation of Battery, Ni-Cd

26) Supply and installation of Battery Charger

27) Supply and lying of Rubber pad to be laid in front of the 11kV SWITCHGEAR Panels.

28) Supply and installation of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing up to Commissioning as per approved design & drawing and instruction of Engineer-in -charge /Employer.
(As per technical specifications mentioned in 7.1.28)

29) 6 (Six) sets of As-built drawings together with operation and maintenance manual, relevant IEC standards of the installed equipment shall be submitted for the Superintending Engineer of Design & Inspection, NESCO Ltd., Rajshahi. **One electronic copy (soft copy in a CD, drawings with AutoCAD softcopy format) of all relevant As-built drawings together with operation and maintenance manual, relevant IEC standards of the installed equipment shall be submitted for the the Superintending Engineer of Design & Inspection, NESCO Ltd., Rajshahi.**

30) **The Bidder must visit the site and assess the works before tender submission.**

31) Contractor shall supply and install digital electronic sign board and complete furniture for the substation control room.

32) Transportation of all equipment and materials, all installations, connections and testing, commissioning, inspection are within the scope of the Bid.

33) List of mandatory spare parts (Items in the list must be same model & manufacturer of supplied main equipment):

Sl. No.	Description	Unit	NESCO's Requirement
1.	**Tripping coil**		
	33 KV VCB	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
2.	**Closing coil**		
	33 KV VCB	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
3.	**Charging Motor**		
	33 KV VCB	Nos	1
	11 KV incoming	Nos	1
4.	**Master Tripping Relay**		
	33 KV VCB Panel	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
	Auxiliary Relay for Transformer Panel	Nos	1
5.	**Trip Circuit supervision Relay**		
	33 KV VCB PCM Panel	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
6.	**Overcurrent & Earth fault relay**		
	33 KV VCB PCM Panel	Nos	1

	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1
7.	**Annunciator**		
	33 KV VCB PCM Panel	Nos	1
	11 KV incoming	Nos	1
	11 KV outgoing feeder	Nos	1

Single line diagram in Annex-1

C. Design and Drawings (Substation-2):

1. Single Line Diagram of Sub-station.
2. Site Layout Plan and arrangement drawings of each Sub-station
3. Proposed lay-down area for construction purpose.
4. **Detailed soil investigation program & soil test report**
5. Civil (Building and others) Drawing.
6. All drawings and design as per Section 7 (architectural, foundation and superstructure)
7. Installation drawings, lay out, grounding/earthing design, Lightning protection, lay out of fire protection etc.
8. All detail Specification, GTP, General Arrangement, Electrical, Mechanical, Dimensional, Cross-Sectional, Connection Drawing for equipment described in Price Schedule.
9. As Built Drawings.
10. Others as required.
11. All drawings will be to be submitted hardcopy, softcopy & AutoCAD softcopy format.
12. Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc, along with Outline, Dimensional, Cross-sectional & General arrangement drawings, Installation diagram, printed catalogue describing the type/ model of offered every equipment shall be submitted to the Superintending Engineer, Design & Inspection, NESCO Ltd., Rajshahi by the Bidder. The submitted Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc must be approved by Design & Inspectoin, NESCO Ltd, Rajshahi prior to the manufacturing of the goods.
13. The Bidder shall have to submit 3 (three) sets of the same for Approval within 15 days from the date of signing Contract. The bidder shall also submit one set reproducible tracing of the above drawings in soft format.

6.1.3 Design, Supply, Erection, Installation, Testing and Commissioning of 33/11KV, 1x10/13.33 MVA AIS Sub-Station (Substation-3) at BSCIC Industrial Park, Sirajganj under NESCO Ltd., Rajshahi.

(Not limited but at least the following works to be done by the turnkey contractor)

A. CIVIL & BUILDING WORKS (Substation-3):

Design, Manufacture, Supply, Installation/ Erection, Construction, Testing and commissioning and so on of the following works are the scope of works:

1) Land development work with height of 0.6 (zero point six) Meter above the highest flood level or 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Employer

will provide all lands (area shown in the attached figure) only and contractor will fill it by sand **(mandatory)**. Soil testing for soil resistivity and soil bearing capacity before designing, final leveling, consolidation, surfacing and compaction of entire switchyard area with crushed rock (where required) to cater for the ultimate development of the substation. The area to be developed for substation construction is 45x30 sq meter.

Note: Although the land has been already filled by sand, the contractor will have to fill it by sand again as per above requirement.

2) Landscaping work and gardening of the whole sub-station area. Bidder shall submit the layout of the whole substation area of landscaping work for approval.

3) Construction of cable trenches for power cable and control cable:

(a) Within the switch yard area
(b) Switch yard area to control room building
(c) Control room building to 11kV feeder poles [Location of 11kV terminal pole will be within 100 meter from the control room building].

4) Construction of Retaining wall (one meter height) which covers 45x30 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 30 meter length).

5) Construction of main entrance gate and side gate.

6) Construction of R.C.C foundations for power transformers, switchyard tower, circuit breaker and all others equipment & Structure as required.

7) Construction of 240 square meter complete two storied Control room building (120 square meter each Floor) **with three storied foundation**. For Control room building - the Cable Trench space, Store Room, Security Space, shall be installed in the Ground floor level (Clear Height 9'-6"); Control room, Battery Room, Toilet shall be installed in the 1st floor level (Clear Height 13'-6").

8) Properly insulated False Ceiling of Control room (1st floor only) suitable for Air conditioning system.

9) Construction of drainage and sanitary system for control room and whole sub-station area.

10) Supply and installation of Operation Key Board, Al/ Steel frame front cover glass with locking device, dust proof.

11) Construction of approach road from the main gate to the switchyard & Control Room entrance and internal road for whole sub-station area and parking area as required. The width of all the roads will be sufficient enough for transportation of all the substation equipment e.g., power transformer, PCM panel etc.
The approach road from the main gate to the switchyard will have minimum slope possible.

12) Supply of gravel and finishing the Switchyard surface by the gravel.

13) Supply and installation of Switchyard Chain link fencing with gate and **Peripheral Chain link fencing which covers a land of 253 meter circumference with gates.**

14) Construction of septic tank, soak well, inspections pits, sewerage piping by PVC 6 inches dia. Pipe, toilet/ bathroom / lavatory located in the control room building having facilities of wash basin, bath shower towel rod, soap case, auzo wash, glass rack, looking mirror, pan fitting with low-down, swan neck pillar cock, extra long bib cock, interior walls and floor (**whole 1st floor**) finished by tiles etc. complete in all respect.

15) Supply and installation of the following:

    Overhead water tank on the top of the control room building, underground water reservoir (tank), water lifting pump, suction pump and portable water supply system complete in all respect [Design shall be based on use of 5 persons per day for overhead water tank].

16) Supply and installation of Wall clock for Operator use, about 12 - 16 inches Dia Dial plate, pointer type, English numerical type but not LCD display Digital type, Quartz.

17) Supply of Operator working table, Steel made, with extra glass on the top, and two nos. of wheel based revolving chair, two number of guest chair, curtain (venetian blind) of window in the control room.

18) Supply of Steel File Cabinet (four drawers), Steel Almirah for record keeping in the control room.

19) Construction/ installation of Substation NAME PLATE/ SIGN BOARD - one no., switching scheme MIMIC Display board - one no. Made of steel/aluminum frame on hard plastic/ at least two mm thick ebonite sheet, white color body

20) Supply and construction of Power cable trench and control cable rack inside the ground floor of the control room building. Proper sealing of the cable entry (control & Power) at Control Room building, to prevent water entering from switch yard/outside to CR Building, preventing entry of rats and reptiles, Fire proof etc.

21) Supply and Installation of Yard Lighting (LED) & Emergency Lighting (LED). All the light fittings shall be LED type & these fittings shall be mounted on switch yard portal structures such as columns & beams. No separate lighting mast is required. Entire substation lighting system in the switch yard shall be designed using underground cables only. No over head conductors are permitted for this purpose. For street lighting one outdoor lighting kiosk with two incomers of 200A rating switch fuse units (SFU) & with six feeders of 32A rating fitted with MCB shall be considered. Lighting within the switchyard must be designed as per relevant IEC standard to achieve the following minimum lighting levels:

    - Minimum 20 lux within the main working areas;
    - Minimum 60 lux at major plant items including marshalling boxes and control cubicles

22) Switchyard lighting must consist of weather proof LED floodlights and switched from inside the building. Floodlights should be a suitable high quality, energy efficient light installed at 45-60 degrees or an angle suitable to maximize the effectiveness of the light. Lighting poles must be Hot Dipped Galvanized and hinged at the base or mid-way up the pole to ensure maintenance is capable of being performed at ground level without the use of ladders or elevated work platforms. The design must check swing down or hinged poles with the proximity to HV equipment to ensure exclusion zones are not encroached when performing floodlight maintenance.

23) Supply and installation of decorative LED street lighting for connecting road (if any) after every 10 meter interval (distance). LED Street lighting have the feature of Multiple Mounting Options Available, Rugged Precision Cast Aluminum Housing, Perforated Air Flow Venting, High Surface Area Extruded Aluminum Heat Sinks, High Output White LED Diode, Decorative Lens Cover Seals the Electrical/Optical Chamber to IP66, Electronic Driver. The pole shall be stylish, non-corrosive, easy to install and have longer service life.

NOTE: All doors & windows work to be finished by aluminum frame and high quality transparent 6 mm thick glasses. Both indoor & outdoor surface finishing works of walls, roof etc, to be synthetic high quality plastic paint and moisture proof snowcem respectively and treatment to be made by lime terracing for rain water leakage proof of the roof.

B. SUB-STATION / ELECTRICAL WORKS (Substation-3):

Design, Manufacture, Supply, Installation/ Erection, Construction, Testing and Commissioning etc. of the following works are the scope of works:

1) Supply and installation of one (01) nos. 33kV transformer Feeders comprising: 33kV Circuit Breaker, CT, DS, LA, Control cable, Cable termination kit, PCM Panels, Supporting structures etc. complete in all respect.

2) Supply and installation of one (01) nos. 33kV Line Feeder comprising: 33kV Circuit Breaker, LA, DS, CT, Control cable, Cable termination kit, PCM Panels, Supporting structures etc.

3) Supply and installation of Station use Auxiliary transformer 200 KVA, 33/0.415 KV, ONAN, Dyn-11 including 33kV gang operated fuse isolator with fuse, 0.415 kV MCCB, power cable, cable terminating kits with structures, etc. complete in all respect.

4) Supply and installation of one nos. 33/11 kV, 10/13.33 MVA Power transformer, Dyn11, with. 33kV Feeder comprising: Circuit Breaker, CT, LA, DS, 11kV Power cable, Control cable, cable terminating kits and supporting structures etc. complete in all respect. Necessary accessories for Power Transformer to be supplied as per field requirement.

5) Supply and installation of 33kV Bus Potential Transformer of ratio

33kV	110V	110 V
√3	√3	√3

one set (three nos. in one set), to be installed on the switch yard gantry structure.

6) Supply and installation of Switchyard shielding materials.

7) Supply and installation of Switchyard grounding materials for whole sub-station area and equipment to be installed. Earth resistance of the substation shall be less than 0.5 ohm.

8) Supply and installation of Switchyard outdoor illumination system.

9) Supply and installation of 33 kV Bus bar Conductor ACSR Martin.

10) Supporting steel column structure for connecting the 11kV XLPE Power Cable with accessories as required.

11) Supply and installation of 33kV switchyard gantry structure of two (02) diameters (Each 5M×5M) with bus bar, bus support insulator & hardware, jumper, shielding materials and grounding materials etc. complete in all respect.

12) Supply and installation of Control room indoor illumination.

13) Supply and installation of Emergency lighting.

14) **Supply and installation of Fire Fighting equipment / system**.

15) Supply and installation of Exhaust Fan (One no. in battery room).

16) Supply and installation of Split type Air cooler (**Country of origin- South Korea, Malaysia**) (At least Forty eight thousand BTU per hr. capacity including MCB, switch, male female plug socket complete) - 3 nos. in 11kV SWITCHGEAR panel room and 33kV protection, control & metering panel room.

17) Supply and installation of Control-Relay Panels for 33kV power transformer & line feeders of the proposed 33kV & 11KV Circuits to be installed in the control room building.

18) Supply and installation of AC Distribution Panel, DC Distribution Panel with interlocking facilities

19) Supply and installation of Separate AC distribution Box, wall mounting for control room internal & external illumination switching, extra power supply arrangement for testing purpose, different operation and maintenance use.

20) Supply and installation of switching boards to be installed in each room for functioning of fans, lights, Air cooler etc.

21) Supply and installation of 11kV SWITCHGEAR comprising:

Incoming from 33/11kV Power transformer (1600A) : 01 (one) nos.
Out-going feeder Breaker (630A) : 03 (three) nos.

11kV Potential transformer having ratio of

11kV	110V	110V
√3	√3	√3

complete in top mounted on the transformer incoming breaker panel.

22) Supply and installation/ connection of 11kV Power Cable, XLPE, but not PVC/ PILC for all 11kV line feeders and transformers feeder including cable termination (Outdoor & Indoor) as required.

22.1) Installation (not supply) of 11 KV Line isolator. (11 KV Line isolator will be supplied from

NESCO Ltd. **and hence it shall not be included in the price schedule)**

23) Supply and installation/ connection of Control Cables

24) Supply and installation of Battery, Ni-Cd

25) Supply and installation of Battery Charger

26) Supply and lying of Rubber pad to be laid in front of the 11kV SWITCHGEAR Panels.

27) 6 (Six) sets of As-built drawings together with operation and maintenance manual, relevant IEC standards of the installed equipment shall be submitted for the Superintending Engineer of Design & Inspection, NESCO Ltd., Rajshahi. **One electronic copy (soft copy in a CD, drawings with AutoCAD softcopy format) of all relevant As-built drawings together with operation and maintenance manual, relevant IEC standards of the installed equipment shall be submitted for the the Superintending Engineer of Design & Inspection, NESCO Ltd., Rajshahi.**

28) **The Bidder must visit the site and assess the works before tender submission.**

29) Contractor shall supply and install digital electronic sign board and complete furniture for the substation control room.

30) Transportation of all equipment and materials, all installations, connections and testing, commissioning, inspection are within the scope of the Bid.

Single line diagram in Annex-1

C. Design and Drawings (Substation-3):

1. Single Line Diagram of Sub-station.
2. Site Layout Plan and arrangement drawings of each Sub-station
3. Proposed lay-down area for construction purpose.
4. Detailed soil investigation program & soil test report
5. Civil (Building and others) Drawing.
6. All drawings and design as per Section 7 (architectural, foundation and superstructure)
7. Installation drawings, lay out, grounding/earthing design, Lightning protection, lay out of fire protection etc.
8. All detail Specification, GTP, General Arrangement, Electrical, Mechanical, Dimensional, Cross-Sectional, Connection Drawing for equipment described in Price Schedule.
9. As Built Drawings.
10. Others as required.
11. All drawings will be to be submitted hardcopy, softcopy & AutoCAD softcopy format.
12. Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc, along with Outline, Dimensional, Cross-sectional & General arrangement drawings, Installation diagram, printed catalogue describing the type/ model of offered every equipment shall be

submitted to the Superintending Engineer, Design & Inspection, NESCO Ltd., Rajshahi by the Bidder. The submitted Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc must be approved by Design & Inspectoin, NESCO Ltd, Rajshahi prior to the manufacturing of the goods.

13. The Bidder shall have to submit 3 (three) sets of the same for Approval within 15 days from the date of signing Contract. The bidder shall also submit one set reproducible tracing of the above drawings in soft format.

6.1.4 Design, Supply, Erection, Installation, Testing and Commissioning of 33/11KV, 1x10/13.33 MVA AIS Sub-Station (Substation-4) at BSCIC Industrial Park, Sirajganj under NESCO Ltd., Rajshahi.

(Not limited but at least the following works to be done by the turnkey contractor)

A. CIVIL & BUILDING WORKS (Substation-4):

Design, Manufacture, Supply, Installation/ Erection, Construction, Testing and commissioning and so on of the following works are the scope of works:

1) Land development work with height of 0.6 (zero point six) Meter above the highest flood level or 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Employer will provide all lands (area shown in the attached figure) only and contractor will fill it by sand **(mandatory)**. Soil testing for soil resistivity and soil bearing capacity before designing, final leveling, consolidation, surfacing and compaction of entire switchyard area with crushed rock (where required) to cater for the ultimate development of the substation. The area to be developed for substation construction is 45x30 sq meter.

Note: Although the land has been already filled by sand, the contractor will have to fill it by sand again as per above requirement.

2) Landscaping work and gardening of the whole sub-station area. Bidder shall submit the layout of the whole substation area of landscaping work for approval.

3) Construction of cable trenches for power cable and control cable:

(a) Within the switch yard area
(b) Switch yard area to control room building
(c) Control room building to 11kV feeder poles [Location of 11kV terminal pole will be within 100 meter from the control room building].

4) Retaining wall (one meter height) which covers 45x30 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 30 meter length).

5) Construction of main entrance gate and side gate.

6) Construction of R.C.C foundations for power transformers, switchyard tower, circuit breaker and all others equipment & Structure as required.

7) Construction of 240 square meter complete two storied Control room building (120 square meter each Floor) **with three storied foundation**. For Control room building - the Cable Trench space, Store Room, Security Space, shall be installed in the Ground floor level (Clear Height 9'-6"); Control

room, Battery Room, Toilet shall be installed in the 1st floor level (Clear Height 13'-6").

8) Properly insulated False Ceiling of Control room (1st floor only) suitable for Air conditioning system.

9) Construction of drainage and sanitary system for control room and whole sub-station area.

10) Supply and installation of Operation Key Board, Al/ Steel frame front cover glass with locking device, dust proof.

11) Construction of approach road from the main gate to the switchyard & Control Room entrance and internal road for whole sub-station area and parking area as required. The width of all the roads will be sufficient enough for transportation of all the substation equipment e.g., power transformer, PCM panel etc.

The approach road from the main gate to the switchyard will have minimum slope possible.

12) Supply of gravel and finishing the Switchyard surface by the gravel.

13) Supply and installation of Switchyard Chain link fencing with gate and **Peripheral Chain link fencing which covers a land of 203 meter circumference with gates.**

14) Construction of septic tank, soak well, inspections pits, sewerage piping by PVC 6 inches dia. Pipe, toilet/ bathroom / lavatory located in the control room building having facilities of wash basin, bath shower towel rod, soap case, auzo wash, glass rack, looking mirror, pan fitting with low-down, swan neck pillar cock, extra long bib cock, interior walls and floor (**whole 1st floor**) finished by tiles etc. complete in all respect.

15) Supply and installation of the following:

Overhead water tank on the top of the control room building, underground water reservoir (tank), water lifting pump, suction pump and portable water supply system complete in all respect [Design shall be based on use of 5 persons per day for overhead water tank].

16) Supply and installation of Wall clock for Operator use, about 12 - 16 inches Dia Dial plate, pointer type, English numerical type but not LCD display Digital type, Quartz.

17) Supply of Operator working table, Steel made, with extra glass on the top, and two nos. of wheel based revolving chair, two number of guest chair, curtain (venetian blind) of window in the control room.

18) Supply of Steel File Cabinet (four drawers), Steel Almirah for record keeping in the control room.

19) Construction/ installation of Substation NAME PLATE/ SIGN BOARD - one no., switching scheme MIMIC Display board - one no. Made of steel/aluminum frame on hard plastic/ at least two mm thick ebonite sheet, white color body

20) Supply and construction of Power cable trench and control cable rack inside the ground floor of the control room building. Proper sealing of the cable entry (control & Power) at Control Room building, to prevent water entering from switch yard/outside to CR Building, preventing entry of rats and reptiles, Fire proof etc.

21) Supply and Installation of Yard Lighting (LED) & Emergency Lighting (LED). All the light fittings shall be LED type & these fittings shall be mounted on switch yard portal structures such as columns & beams. No separate lighting mast is required. Entire substation lighting system in the switch yard shall be designed using underground cables only. No over head conductors are permitted for this purpose. For street lighting one outdoor lighting kiosk with two incomers of 200A rating switch fuse units (SFU) & with six feeders of 32A rating fitted with MCB shall be considered. Lighting within the switchyard must be designed as per relevant IEC standard to achieve the following minimum lighting levels:

- Minimum 20 lux within the main working areas;
- Minimum 60 lux at major plant items including marshalling boxes and control cubicles

22) Switchyard lighting must consist of weather proof LED floodlights and switched from inside the building. Floodlights should be a suitable high quality, energy efficient light installed at 45-60 degrees or an angle suitable to maximize the effectiveness of the light. Lighting poles must be Hot Dipped Galvanized and hinged at the base or mid-way up the pole to ensure maintenance is capable of being performed at ground level without the use of ladders or elevated work platforms. The design must check swing down or hinged poles with the proximity to HV equipment to ensure exclusion zones are not encroached when performing floodlight maintenance.

23) Supply and installation of decorative LED street lighting for connecting road (if any) after every 10 meter interval (distance). LED Street lighting have the feature of Multiple Mounting Options Available, Rugged Precision Cast Aluminum Housing, Perforated Air Flow Venting, High Surface Area Extruded Aluminum Heat Sinks, High Output White LED Diode, Decorative Lens Cover Seals the Electrical/Optical Chamber to IP66, Electronic Driver. The pole shall be stylish, non-corrosive, easy to install and have longer service life.

NOTE: All doors & windows work to be finished by aluminum frame and high quality transparent 6 mm thick glasses. Both indoor & outdoor surface finishing works of walls, roof etc, to be synthetic high quality plastic paint and moisture proof snowcem respectively and treatment to be made by lime terracing for rain water leakage proof of the roof.

B. SUB-STATION / ELECTRICAL WORKS (Substation-4):

Design, Manufacture, Supply, Installation/ Erection, Construction, Testing and Commissioning etc. of the following works are the scope of works:

1) Supply and installation of one (01) nos. 33kV transformer Feeders comprising: 33kV Circuit Breaker, CT, DS, LA, Control cable, Cable termination kit, PCM Panels, Supporting structures etc. complete in all respect.

2) Supply and installation of one (01) nos. 33kV Line Feeder comprising: 33kV Circuit Breaker, LA, DS, CT, Control cable, Cable termination kit, PCM Panels, Supporting structures etc.

3) Supply and installation of Station use Auxiliary transformer 200 KVA, 33/0.415 KV, ONAN, Dyn-11 including 33kV gang operated fuse isolator with fuse, 0.415 kV MCCB, power cable, cable terminating kits with structures, etc. complete in all respect.

4) Supply and installation of one nos. 33/11 kV, 10/13.33 MVA Power transformer, Dyn11, with.

33kV Feeder comprising: Circuit Breaker, CT, LA, DS, 11kV Power cable, Control cable, cable terminating kits and supporting structures etc. complete in all respect. Necessary accessories for Power Transformer to be supplied as per field requirement.

5) Supply and installation of 33kV Bus Potential Transformer of ratio

33kV	110V	110 V
√3	√3	√3

one set (three nos. in one set), to be installed on the switch yard gantry structure.

6) Supply and installation of Switchyard shielding materials.

7) Supply and installation of Switchyard grounding materials for whole sub-station area and equipment to be installed. Earth resistance of the substation shall be less than 0.5 ohm.

8) Supply and installation of Switchyard outdoor illumination system.

9) Supply and installation of 33 kV Bus bar Conductor ACSR Martin.

10) Supporting steel column structure for connecting the 11kV XLPE Power Cable with accessories as required.

11) Supply and installation of 33kV switchyard gantry structure of two (02) diameters (Each 5M×5M) with bus bar, bus support insulator & hardware, jumper, shielding materials and grounding materials etc. complete in all respect.

12) Supply and installation of Control room indoor illumination.

13) Supply and installation of Emergency lighting.

14) **Supply and installation of Fire Fighting equipment / system**.

15) Supply and installation of Exhaust Fan (One no. in battery room).

16) Supply and installation of Split type Air cooler (**Country of origin- South Korea, Malaysia**) (At least Forty eight thousand BTU per hr. capacity including MCB, switch, male female plug socket complete) - 3 nos. in 11kV SWITCHGEAR panel room and 33kV protection, control & metering panel room.

17) Supply and installation of Control-Relay Panels for 33kV power transformer & line feeders of the proposed 33kV & 11KV Circuits to be installed in the control room building.

18) Supply and installation of AC Distribution Panel, DC Distribution Panel with interlocking facilities

19) Supply and installation of Separate AC distribution Box, wall mounting for control room internal & external illumination switching, extra power supply arrangement for testing purpose, different operation and maintenance use.

20) Supply and installation of switching boards to be installed in each room for functioning of fans, lights, Air cooler etc.

21) Supply and installation of 11kV SWITCHGEAR comprising:

Incoming from 33/11kV Power transformer (1600A) : 01 (one) nos.
Out-going feeder Breaker (630A) : 03 (three) nos.

11kV Potential transformer having ratio of

11kV	110V	110V
√3	√3	√3

complete in top mounted on the transformer incoming breaker panel.

22) Supply and installation/ connection of 11kV Power Cable, XLPE, but not PVC/ PILC for all 11kV line feeders and transformers feeder including cable termination (Outdoor & Indoor) as required.

22.1) Installation (not supply) of 11 KV Line isolator. (11 KV Line isolator will be supplied from NESCO Ltd. **and hence it shall not be included in the price schedule)**

23) Supply and installation/ connection of Control Cables

24) Supply and installation of Battery, Ni-Cd

25) Supply and installation of Battery Charger

26) Supply and lying of Rubber pad to be laid in front of the 11kV SWITCHGEAR Panels.

27) 6 (Six) sets of As-built drawings together with operation and maintenance manual, relevant IEC standards of the installed equipment shall be submitted for the Superintending Engineer of Design & Inspection, NESCO Ltd., Rajshahi. **One electronic copy (soft copy in a CD, drawings with AutoCAD softcopy format) of all relevant As-built drawings together with operation and maintenance manual, relevant IEC standards of the installed equipment shall be submitted for the the Superintending Engineer of Design & Inspection, NESCO Ltd., Rajshahi.**

28) **The Bidder must visit the site and assess the works before tender submission.**

29) Contractor shall supply and install digital electronic sign board and complete furniture for the substation control room.

30) Transportation of all equipment and materials, all installations, connections and testing, commissioning, inspection are within the scope of the Bid.

Single line diagram in Annex-1

C. Design and Drawings (Substation-4):

1. Single Line Diagram of Sub-station.
2. Site Layout Plan and arrangement drawings of each Sub-station
3. Proposed lay-down area for construction purpose.
4. **Detailed soil investigation program & soil test report**
5. Civil (Building and others) Drawing.
6. All drawings and design as per Section 7 (architectural, foundation and superstructure)
7. Installation drawings, lay out, grounding/earthing design, Lightning protection, lay out of fire protection etc.
8. All detail Specification, GTP, General Arrangement, Electrical, Mechanical, Dimensional, Cross-Sectional, Connection Drawing for equipment described in Price Schedule.
9. As Built Drawings.
10. Others as required.
11. All drawings will be to be submitted hardcopy, softcopy & AutoCAD softcopy format.
12. Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc, along with Outline, Dimensional, Cross-sectional & General arrangement drawings, Installation diagram, printed catalogue describing the type/ model of offered every equipment shall be submitted to the Superintending Engineer, Design & Inspection, NESCO Ltd., Rajshahi by the Bidder. The submitted Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc must be approved by Design & Inspectoin, NESCO Ltd, Rajshahi prior to the manufacturing of the goods.
13. The Bidder shall have to submit 3 (three) sets of the same for Approval within 15 days from the date of signing Contract. The bidder shall also submit one set reproducible tracing of the above drawings in soft format.

6.1.2 Bill of Quantities (BOQ)

1. All the items mentioned in the BOQ (as follows) shall be quoted in the respective format of the price schedule, otherwise bid will be rejected.

2. Tenderer shall quote a Firm Turnkey Contract Price for the Supply and Related Services as described in Price Schedule according to Section 6, Section 7 & Section 8 of this Tender document. **If the Tenderer deemed necessary any additional machineries/equipment/ materials / Supply and Related Services out of the list of tender Price Schedule for completion of the said Turnkey basis works(Supply and Related Services), contractor shall have to do the additional works (Supply and Related Services) without any additional cost. The costs of these additional works (Supply and Related Services) are deemed to be included within the quoted price.**

6.1.2.1 Bill of Quantities for Design, Supply, Erection, Installation, Testing and Commissioning of 33/11KV, 1x10/13.33 MVA AIS Sub-Station (Substation-1) at BSCIC Industrial Park, Sirajganj under NESCO Ltd., Rajshahi.

Substation-1, BSCIC Industrial Park, Sirajganj			
Line Item No.	**Description of Item**	**Quantity**	
1	**2**	**3**	
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	4
4	Supply of 33 KV, Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories.	Set (1 set = 3 nos.)	4
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	4
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	3
7	Supply of 33 KV Bus Section Isolator, 1250A, 31.5 KA sor 3 sec without earthing blade gang operated horizontal structure for installation on gantry steel structure with necessary connections and accessories.	Set	1
8	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	3
9	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	4
10	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3 KV) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	2
11	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1

Substation-1, BSCIC Industrial Park, Sirajganj			
Line Item No.	**Description of Item**	**Quantity**	
12	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1
13	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1
14	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1
15	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1
	Tension clamps with fitting		
	PG Clamp		
	Support clamp		
16	Supply of 2x150 mm2 grounding copper conductor.	Lot	1
17	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1
18	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1
19	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF +1 SEF, AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.	Set	1
20	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	3
21	Supply of Substation galvanized steel structure material 3 (Three) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1
22	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1
23	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters,	Set	1

Substation-1, BSCIC Industrial Park, Sirajganj			
Line Item No.	**Description of Item**	**Quantity**	
	kWh meters, MW meters, kVAR & PF meter and all other accessories as required.		
24	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3
25	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1
26	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300
27	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180
28	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280
29	Supply of Station type 11 kV Surge Arrester including surge monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set= 3No.)	1
30	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1
31	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1
32	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1
33	Supply of DC Distribution Panel with interlocking.	Set	1
34	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1
35	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1
36	Supply of Fire Extinguisher equipment		
	a) CO2 (02 nos.)		6

Substation-1, BSCIC Industrial Park, Sirajganj			
Line Item No.	**Description of Item**	**Quantity**	
	b) Foam type (02 nos.)	nos.	
	c) Dry Chemical type (02 nos.)		
37	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3
38	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10
39	Supply of Desktop Computer with UPS, Scanner, Printer, LED Electronic Sign board.	Lot	1
40	Supply of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing upto Commissioning as per approved design & drawing and instruction of Engineer-in -charge /Employer.	Lot	1
41	Mandatory spare parts (master trip relay, auxiliary relay, O/C & E/F relay, Trip coil 33 KV, Trip coil 11 KV, Closing coil, Charging Motor, Trip Circuit supervision Relay, Annunciator etc. as mentioned in Chapter 6: Employer Requirements.)	Lot	1
42	All Design, Drawing and Documentation works including 06 (Six) Sets of As-Built drawings and substations operation and maintenance manual (Drawings in AutoCAD format)	Lot	1
43	**Civil works:**		
	a) Land development with filling by sand with height of 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Landscaping, Leveling, Dressing / Prepararion of Gravel Pit, Laying of Gravel as required. The area to be developed for substation construction is 45x35 sq meter.	Lot	1
	b) Sub-station Control room Building, two storied with 150 square meter per floor having 3 storied foundation including Switch Gear Room, Battery room, O/H Tank, Water Supply, Sanitary system, Internal Electrification, Emergency Lighting, False Ceiling etc.	sq meter	300
	c) Approach including internal road, walkway, Drainage System & guard post building.	Lot	1
	d) Retaining wall (one meter height) which covers 45x35 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 35 meter length).	Lot	1

Substation-1, BSCIC Industrial Park, Sirajganj			
Line Item No.	**Description of Item**	**Quantity**	
	e) Foundation of Equipment, Power & Control Cable Trench etc.	Lot	1
	f) Switch Yard Fencing with Gate.	Lot	1
	g) Peripheral fencing which covers a 105x72 square meter of land with gates.	meter	354
	h) Yard lighting and emergency lighting.	Lot	1
	i) Operation Key Board, Table, chair Steel Almirah, File Cabinet, Ceiling Fans etc.	Lot	1
	j) Tree plantation, gardening and beautification.	Lot	1
44	Installation, Erection, Testing, Commissioning of each part of the whole substation (As per Scope of Works, Technical Specification and GTP).	Lot	1

6.1.2.2 Bill of Quantities for Design, Supply, Erection, Installation, Testing and Commissioning of 33/11KV, 1x10/13.33 MVA AIS Sub-Station (Substation-2) at BSCIC Industrial Park, Sirajganj under NESCO Ltd., Rajshahi.

Substation-2, BSCIC Industrial Park, Sirajganj			
Line Item No.	**Description of Item**	**Quantity**	
1	**2**	**3**	
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1

3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	4
4	Supply of 33 KV, Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories.	Set (1 set = 3 nos.)	4
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	4
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	3
7	Supply of 33 KV Bus Section Isolator, 1250A, 31.5 KA sor 3 sec without earthing blade gang operated horizontal structure for installation on gantry steel structure with necessary connections and accessories.	Set	1
8	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	3
9	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	4
10	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3 KV) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	2
11	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1
12	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1
13	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1
14	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1
15	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure Tension clamps with fitting PG Clamp Support clamp	Lot	1

16	Supply of 2x150 mm2 grounding copper conductor.	Lot	1
17	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1
18	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1
19	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF +1 SEF, AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.	Set	1
20	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	3
21	Supply of Substation galvanized steel structure material 3 (Three) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1
22	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1
23	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1
24	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3
25	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1
26	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300
27	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180
28	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280

29	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set= 3No.)	1
30	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1
31	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1
32	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1
33	Supply of DC Distribution Panel with interlocking.	Set	1
34	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1
35	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1
36	Supply of Fire Extinguisher equipment		
	a) CO2 (02 nos.)	nos.	6
	b) Foam type (02 nos.)		
	c) Dry Chemical type (02 nos.)		
37	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3
38	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	15
39	Supply of Desktop Computer with UPS, LED Electronic Sign board.	Lot	1
40	Supply of Fire Detection & Protection Facilities for control room building including all accessories/ components required for fitting & fixing up to Commissioning as per approved design & drawing and instruction of Engineer-in -charge /Employer.	Lot	1
41	Mandatory spare parts (master trip relay, auxiliary relay, O/C & E/F relay, Trip coil 33 KV, Trip coil 11 KV, Closing coil, Charging Motor, Trip Circuit supervision Relay, Annunciator etc. as mentioned in Chapter 6: Employer Requirements.)	Lot	1
42	All Design, Drawing and Documentation works including 06 (Six) Sets of As-Built drawings and substations operation and maintenance manual (Drawings in AutoCAD format)	Lot	1
43	**Civil works:**		

	a) Land development with filling by sand with height of 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Landscaping, Leveling, Dressing / Prepararion of Gravel Pit, Laying of Gravel as required. The area to be developed for substation construction is 45x35 sq meter.	Lot	1
	b) Sub-station Control room Building, two storied with 150 square meter per floor having 3 storied foundation including Switch Gear Room, Battery room, O/H Tank, Water Supply, Sanitary system, Internal Electrification, Emergency Lighting, False Ceiling etc.	sq meter	300
	c) Approach including internal road, walkway, Drainage System and guard post building.	Lot	1
	d) Retaining wall (one meter height) which covers 45x35 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 35 meter length).	Lot	1
	e) Foundation of Equipment, Power & Control Cable Trench etc.	Lot	1
	f) Switch Yard Fencing with Gate.	Lot	1
	g) Peripheral fencing which covers a 71x52 square meter of land with gates.	meter	246
	h) Yard lighting and emergency lighting.	Lot	1
	i) Operation Key Board, Table, chair Steel Almirah, File Cabinet, Ceiling Fans etc.	Lot	1
	j) Tree plantation, gardening and beautification.	Lot	1
44	Installation, Erection, Testing, Commissioning of each part of the whole substation (As per Scope of Works, Technical Specification and GTP).	Lot	1

6.1.2.3 Bill of Quantities for Design, Supply, Erection, Installation, Testing and Commissioning of 33/11KV, 1x10/13.33 MVA AIS Sub-Station (Substation-3) at BSCIC Industrial Park, Sirajganj under NESCO Ltd., Rajshahi.

Substation-3, BSCIC Industrial Park, Sirajganj

Line Item No.	Description of Item	Quantity	
1	2	3	
1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	2
4	Supply of 33 KV, Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories.	Set (1 set = 3 nos.)	2
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	2
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	1
7	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	2
8	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	2
9	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3 KV) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	1
10	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1
11	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1
12	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1
13	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1
14	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure	Lot	1

	Tension clamps with fitting PG Clamp Support clamp		
15	Supply of 2x150 mm2 grounding copper conductor.	Lot	1
16	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1
17	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1
18	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF +1 SEF, AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.	Set	1
19	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	1
20	Supply of Substation galvanized steel structure material 2 (two) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1
21	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1
22	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1
23	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3
24	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1
25	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300

26	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180
27	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280
28	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set= 3No.)	1
29	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1
30	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1
31	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1
32	Supply of DC Distribution Panel with interlocking.	Set	1
33	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1
34	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1
35	Supply of Fire Extinguisher equipment		
	a) CO2 (02 nos.)	nos.	6
	b) Foam type (02 nos.)		
	c) Dry Chemical type (02 nos.)		
36	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3
37	Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10
38	Supply of Desktop Computer with UPS, LED Electronic Sign board, furniture for control room.	Lot	1
39	All Design, Drawing and Documentation works including 06 (Six) Sets of As-Built drawings and substations operation and maintenance manual (Drawings in AutoCAD format)	Lot	1
40	**Civil works:**		
	a) Land development with filling by sand with height of 0.6 (zero point six) Meter above the nearest high way/road level which is higher.	Lot	1

	Landscaping, Leveling, Dressing / Prepararion of Gravel Pit, Laying of Gravel as required. The area to be developed for substation construction is 45x30 sq meter.		
	b) Sub-station Control room Building, two storied with 120 square meter per floor having 3 storied foundation including Switch Gear Room, Battery room, O/H Tank, Water Supply, Sanitary system, Internal Electrification, Emergency Lighting, False Ceiling etc.	sq meter	240
	c) Approach including internal road ,walkway, Drainage System and guard post building.	Lot	1
	d) Retaining wall (one meter height) which covers 45x30 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 30 meter length).	Lot	1
	e) Foundation of Equipment, Power & Control Cable Trench etc.	Lot	1
	f) Switch Yard Fencing with Gate.	Lot	1
	g) Peripheral fencing which covers a land of 253 meter circumference with gates.	meter	253
	h) Yard lighting and emergency lighting.	Lot	1
	i) Operation Key Board, Table, chair Steel Almirah, File Cabinet, Ceiling Fans etc.	Lot	1
	j) Tree plantation, gardening and beautification.	Lot	1
41	Installation, Erection, Testing, Commissioning of each part of the whole substation (As per Scope of Works, Technical Specification and GTP).	Lot	1

6.1.2.4 Bill of Quantities for Design, Supply, Erection, Installation, Testing and Commissioning of 33/11KV, 1x10/13.33 MVA AIS Sub-Station (Substation-4) at BSCIC Industrial Park, Sirajganj under NESCO Ltd., Rajshahi.

Substation-4, BSCIC Industrial Park, Sirajganj		
Line Item No.	**Description of Item**	**Quantity**
1	**2**	**3**

1	Supply of 33/11 kV, 10/13.33 MVA Power Transformer complete with accessories.	Set	1
2	Supply of 33/0.415 kV 200 kVA Station Transformer complete with accessories.	Set	1
3	Supply of 36 kV Vacuum Circuit Breaker, 1250A, 31.5 kA for 3 sec. outdoor circuit breaker along with accessories.	Set	2
4	Supply of 33 KV, Single Phase Lightning Arrestor (Polymar insulator, ZnO-type) along with supporting structure and required accessories.	Set (1 set = 3 nos.)	2
5	Supply of 33 kV Isolator, 1250A, 31.5 kA for 3 sec. without earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	2
6	Supply of 33 kV Line Isolator, 1250A, 31.5 kA for 3 sec. with earthing blade gang operated vertical mounted vertical break with supporting steel structure, connectors and accessories.	Set	1
7	Supply of 33 kV, Off-load fused Isolator for Auxiliary Transformer and Bus PT with supporting steel structure and necessary connectors.	Set	2
8	Supply of 33 KV single phase Current Transformer, ratio 600-1200/5-5A (for line) 300-600/5-5-5A (for Transformer incoming feeder) class 5P30 and .2S along with supporting steel structure and suitable bi-metalic connectors and with accessories.	Set (1 set = 3 nos.)	2
9	Supply of 33 KV single phase Potential Transformer (ratio 33/√3/.11/√3/.11/√3 KV) class .2 and 3P, along with supporting materials for installation on gantry structure with necessary connectors and other accessories.	Set (1 set = 3 nos.)	1
10	Supply of 33 kV Bus bar Conductor ACSR Martin.	Lot	1
11	33 KV and 11 KV Disk Insulator set with necessary suitable front and back connecting clamps.	Lot	1
12	Suitable Busbar Droppers, Conductors, Connectors and outdoor marshaling kiosk, Necessary hardware for all suitable connections to each substation equipment, Claps, Nut-bolts etc.	Lot	1
13	Supply of Shield wire overall diameter of 9.5 mm standard steel.	Lot	1
14	Supply of Terminal Tension clamp with fittings and PG Clamp set for fixing the shield wire with the gantry steel structure Tension clamps with fitting PG Clamp	Lot	1

	Support clamp		
15	Supply of 2x150 mm2 grounding copper conductor.	Lot	1
16	Supply of Grounding Rod (Earthing Electrode) dia 16 mm each 6 meter length.	Lot	1
17	Supply of suitable connectors for connecting with individual item of substation equipment between substation equipment and earthing mesh.	Lot	1
18	Supply of 33 kV Control Metering and Relay Panel for 33/11 kV, 10/13.33 MVA Power Transformer with Differential Relay + 3 O/C + 1 E/F, 1 REF +1 SEF, AVR relay for automatic OLTC operation including digital indication system for transformer tap position, oil temperature, winding temperature etc. All other accessories required as per Section 7 & Section 8.	Set	1
19	Supply of 33 kV Control Metering and Relay Panel for 33 kV Line Feeder with 3 O/C + 1 E/F + 3 Directional O/C + 1 Directional E/F. All other accessories required as per Section 7 & Section 8.	Set	1
20	Supply of Substation galvanized steel structure material 2 (two) diameter each 5M*5M along with suitable beam for 33 KV bus section, PT, LA, isolator etc.	Lot	1
21	Supply of Supporting steel column structure for connecting the 11 kV power cable with the necessary insulators and connectors, connecting clamps etc. as required.	Lot	1
22	Supply of 12kV Transformer incoming switchgear Unit comprising 3 phase bus bars 1600A, VCB 1600A, 31.5 kA for 3 sec., 1-Phase CT for ratio 600-1200/5-5-5A, 11 KV PT, 3 Over Current + 2 Earth fault (1 E/F + 1 Separate Standby Earth Fault) + Directional O/C & E/F relay, Ammeters, Voltmeters, kWh meters, MW meters, kVAR & PF meter and all other accessories as required.	Set	1
23	Supply of 12 kV overhead Line Feeder unit comprising 3-Phase bus bars 1600A, VCB 630A, 31.5 kA for 3 sec. 1-Phase CT of ratio 200-400/5-5A. Three pole over current & single pole EF Relays for IDMT protection, Ammeter, Voltmeter, kWh meters, kVAR & MW meters and all other accessories as required.	Set	3
24	Supply of Rubber Pad to be laid in front of the 11 kV panels.	Lot	1
25	Supply of 11 kV Single core XLPE copper cable two fold 1Cx300mm Sq. per phase of power transformer and 11 kV cable termination kits (indoor and outdoor both). (2*150=300) meter or more as per field requirement	meter	300
26	Supply of 11 kV, 3 core XLPE copper cable 185 Sq. mm per phase 11 kV cable termination kits (indoor & outdoor both) for 3 nos. feeder each 60 m length or more as per field requirement.	meter	180

27	Supply of Single-Core, 95 mm2 PVC Insulated and PVC Sheathed Copper Cable, 280 m length or more as per field requirement.	meter	280
28	Supply of Station type 11 kV Surge Arrester including surge Monitor/counter, Supporting Steel Structure and other accessories as per Scope of Plant & Services, Technical Specification and GTP.	Set (1Set= 3No.)	1
29	Supply of All Cable termination (11 kV, .415KV) along with all requirements as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1
30	Supply of Control Cable (4*6 sqmm, 4*4 sqmm, 4*2.5 sqmm, 8*2.5 sqmm, 16*2.5 sqmm, 24*2.5 sqmm) and LV Power Cables as per Scope of Plant & Services, Technical Specification and GTP.	Lot	1
31	Supply of 110 Volt DC Battery and Battery charger equipment.	Set	1
32	Supply of DC Distribution Panel with interlocking.	Set	1
33	Supply of AC Distribution Panel including Energy meter for substation (Class of accuracy 1.0).	Set	1
34	Supply of LV MCCB, 3 phase, 300A with box and fittings	Lot	1
35	Supply of Fire Extinguisher equipment		
	a) CO2 (02 nos.)	nos.	6
	b) Foam type (02 nos.)		
	c) Dry Chemical type (02 nos.)		
36	Supply of Split type Air Conditioner of capacity 48000 BTU/ Hr including MCB and all other accessories as required.	Set	3
37	Supply of Supply of LED floodlights, 240 Volts single Phase with shade & fittings and other related accessories (As per scope of works and technical Specification).	Set	10
38	Supply of Desktop Computer with UPS, LED Electronic Sign board, furniture for control room.	Lot	1
39	All Design, Drawing and Documentation works including 06 (Six) Sets of As-Built drawings and substations operation and maintenance manual (Drawings in AutoCAD format)	Lot	1
40	**Civil works:**		
	a) Land development with filling by sand with height of 0.6 (zero point six) Meter above the nearest high way/road level which is higher. Landscaping, Leveling, Dressing / Prepararion of Gravel Pit, Laying of Gravel as required. The area to be developed for substation construction is 45x30 sq meter.	Lot	1

	b) Sub-station Control room Building, two storied with 120 square meter per floor having 3 storied foundation including Switch Gear Room, Battery room, O/H Tank, Water Supply, Sanitary system, Internal Electrification, Emergency Lighting, False Ceiling etc.	sq meter	240
	c) Approach including internal road, walkway, Drainage System and guard post building.	Lot	1
	d) Retaining wall (one meter height) which covers 45x30 sq meter area with gate. On the entry side of substation retaining wall will be of 1.5 (one point five) meter height (for 30 meter length).	Lot	1
	e) Foundation of Equipment, Power & Control Cable Trench etc.	Lot	1
	f) Switch Yard Fencing with Gate.	Lot	1
	g) Peripheral fencing which covers a land of 203 meter circumference with gates.	meter	203
	h) Yard lighting and emergency lighting.	Lot	1
	i) Operation Key Board, Table, chair Steel Almirah, File Cabinet, Ceiling Fans etc.	Lot	1
	j) Tree plantation, gardening and beautification.	Lot	1
41	Installation, Erection, Testing, Commissioning of each part of the whole substation (As per Scope of Works, Technical Specification and GTP).	Lot	1

SECTION 07

TECHNICAL SPECIFICATIONS
OF
(PLANT & EQUIPMENT)

7.1 TECHNICAL SPECIFICATIONS FOR 33/11 KV AIS SUBSTATION EQUIPMENT

7.1.1 Scope

This clause describes the General Technical Requirements for the new 33 KV Circuit Breaker with PCM and 11KV AIS Switchgear and general switchyard equipment, and shall be read in conjunction with the Project Requirements, Schedules and Drawings in the specification.

The Contractor shall demonstrate that the switchgear has been designed, built and installed in accordance with the relevant and latest international standards and the specification as specified in the tender documents. It shall also operate and perform on a site in accordance with the requirements of the specification and in the environment defined herein.

The design shall be proven by the submission at the time of Tender of test certificates covering all specified tests deemed to be pertinent to the plant and to the conditions in which it will operate or, if such test certificates cannot be supplied or are deemed unacceptable by the Engineer, type tests which will be subject to the conditions of this Contract shall be carried out at no extra cost to the Employer.

The requirement for switchgear spares, tools and appliances, including test, maintenance and handling equipment shall be as stated in the tender document.

7.1.2 References

7.1.2.1 British Standards

BS	159	Specifications for HV bus bars and bus bar connections
BS	1977	Specifications for high conductivity copper tubes for electrical purposes
BS	2898	Specifications for wrought aluminium for electrical purposes. Strip with drawn or rolled edges.
BS	3938	Specification for current transformers.
BS	5253	Specifications for AC disconnectors and earthing switches.
BS	6651	Lightning Protection
BS	7354	Code of practice for design of HV open terminal stations.

7.1.2.2 IEC Standards

1.	IEC 62271 Series	HV Switchgear and Controlgear- All parts.
2.	IEC 60376	Specification and acceptance of new sulphur hexafluoride
3.	IEC 60480	Guide to checking of sulphur hexafluoride taken from electrical equipment.
4.	IEC 60060	High Voltage test techniques.
5.	IEC 60071	Insulation Co-ordination
6.	IEC 60099-5	Surge arresters Part 5: Selection and application reccommandation
7.	IEC 61869-1	Instrument transformers - Part 1: General requirements
8.	IEC 61869-2	Current transformers.
9.	IEC 61869-3	Voltage transformers.
10.	IEC 60273	Characteristics of indoor and outdoor post insulators for systems with nominal voltages greater than 1000V.
11.	IEC 61850	Communication network and system in substation
12.	IEC 60529	Degrees of protection provided by Enclosure (IP code)
13.	IEC 60255	Electrical relays
14.	IEC 62271-1	High voltage switchgear and control gear: common specification
15.	IEC 62271-100	High voltage switchgear and control gear: Part 100: Alternating current circuit breakers
16.	IEC 62271-102	High voltage switchgear and control gear: Part 102: Alternating current

		disconnector and earthing switch

7.1.3 33 kV Vacuum Circuit Breaker

1.	Installation	:	Outdoor Sub-station.
2.	Type	:	Vacuum Circuit Breakers
3.	Number of Phase	:	3 (Three)
4.	Operation	:	Single Break in Service/ Pole
5.	Nominal Voltage	:	33 KV
6.	Maximum Operating Voltage	:	36 KV
7.	Frequency	:	50 Hz
8.	Rated Current for	:	1250A
9.	Symmetrical Breaking Capacity	:	1800 MVA
10.	Asymmetry	:	50%
11.	Short Time Current Duration	:	31.5 KA, 3 Sec.
12.	Making Current (Peak) KA	:	80KA
13.	Opening Time (Maximum)	:	0.05 Sec.
14.	Breaking Time	:	$\leq$ 5 Cycle
15.	Capacity of Vacuum Interrupter at rated short circuit current switching	:	$\geq$100 nos. of operations
16.	Basic Insulation Level (1.2/50 Micro Second Wave)	:	170 KV_p
17.	Power Frequency Test Voltage (Dry)		70 KV at 50 Hz, 1 Min.
18.	Rated Operating Sequence	:	0-0.3 Sec – CO – 3 min – CO
19.	Standard	:	Design, Manufacture, Testing, Installation and Performance shall be in accordance with the latest edition of applicable IEC-62271-100
20.	FEATURES		
	- Circuit Breaker terminal connectors shall be suitable for ACSR Merlin, Gross Beak (636MCM). - Grading terminal connector. - Current carrying parts - **Terminals are made by Copper/Al-Alloy and all other Current carrying parts are made by Copper.** - Externally visible circuit breaker position indicator. - Electrically remote controlled operating mechanism. - Shall be capable of the interrupting duties produced by the switching of transformer magnetizing current and the switching of line charging current. Tests certificate demonstrating this ability of the circuit breakers shall be submitted with the offer. - Circuit Breaker closing mechanism shall be 230 volt AC motor wound spring-operated type such that the closing speed is independent of the operator. Spring charging motor shall be AC driven Universal motor. Rectifier in motor circuit is not acceptable. - Shall be two tripping coils and one closing coil. Trip coil and close coil shall have freewheeling diode installed. - Hand closing and tripping shall be done through manual levers. - Trip free mechanism as specified in IEC 60056-1 i.e. tripping is independent. - Local “Close” and “Trip” controller. - VCB should be re-strike free. - VCB should be trip free. - Operation Counter.		

	- Supporting Steel Structure. - Bushing Insulator as Specified in IEC-60137. - Weather proof sheet steel control kiosk, with hinged door on three sides and necessary multi-core cable glands. Controls from this position will normally is used under maintenance and emergency conditions only. AC 230V lighting system inside the door of control kiosk shall be provided. - ARC suppression type contacts. - Manually operating devices for slow closing for inspection and maintenance. It shall not be possible to slow close a breaker when in normal services. - Earthing pad with provision for earth leads. - Standard sundries like anti-condensation heaters, MCBS wiring board etc. Facilities to be incorporate for tripping and lockout of the breaker in the event Vacuum failure falling below stipulated value. - Rating plate and diagram plate shall be made of stainless steel and have engraved letters filled with black enamel paint with clear visibility. - Evidence of prototype tests together with test certificate from an internationally reputed/accredited institution covering the equipment shall be furnished with the offer. The test duty shall be as per the requirements of IEC–60056. - Laminated control & protection drawing set shall be fitted/supplied inside the control box/kiosk. - Motor-driven, spring charged - Automatically charged after each closing operation - O-C-O operation without recharging - Mechanical / electrical interlocking, anti-pumping - Provision for manual charging - Manual closing and tripping arrangement - Mechanical ON-OFF, operation counter and spring-charged indication - All necessary positive interlocks installed, as per IEC guidelines.

7.1.3.1 INFORMATION REQUIRED for Outdoor type VCB

The Bidder/ Manufacturer as per tender requirements shall provide all information. Besides these, the following information/ Documents have to be submitted:-

a) The Bidder/ Manufacturer shall submit with the bid the testing procedure & list of testing/ measuring equipment, meters etc. along with valid Calibration Certificate(s) from competent authority used in manufacturer's laboratory for performing Routine Test as per IEC standard.
b) Construction, Installation, Operation & Maintenance Manual.
c) Outline, Dimensional, Cross-sectional & General arrangement drawings of offered type equipment with mounting structure arrangement.
d) Manufacturer's printed catalogue describing specification and technical data of the offered type equipment.

7.1.3.2 TEST REPORTS FOR VCB:

FOR 33KV SWITCHGEAR (OUTDOOR VCB WITH PCM):

Type Test Certificates & Reports for offered type similar or higher Ampere rating Outdoor Vacuum Circuit Breaker for same voltage class from any **short-circuit testing liaison (STL) Member [http://www.stl-liaison.org/web/03_Members.php]** Testing Organization or Laboratory as per relevant IEC standard. The type test report along with results shall include **at least** the following tests:

a) Lightning Impulse Voltage withstand tests
b) Power Frequency withstand tests
c) Temperature Rise tests
d) Measurement of Resistance of the main circuit.
e) Short-time withstand current and peak withstand current tests.
f) Mechanical Endurance tests
g) Short Circuit performance tests
h) Out-of-phase making & breaking tests
i) IP55 test

7.1.3.3 APPROVAL OF DRAWINGS FOR OUTDOOR TYPE VCB

Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc, along with Outline, Dimensional, Cross-sectional & General arrangement drawings, Installation diagram, printed catalogue describing the type/ model of offered circuit breaker and vacuum interrupter shall be submitted to to the Superintending Engineer, Design & Inspectoin, NESCO Ltd, Rajshahi by the Bidder. The submitted Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc must be approved by Design & Inspectoin, NESCO Ltd, Rajshahi prior to the manufacturing of the goods.

The Bidder shall have to submit 3 (three) sets of the same for Approval within 15 days from the date of signing Contract. The bidder shall also submit one set reproducible tracing of the above drawings in soft format.

No work shall be performed in connection with the fabrication and manufacture of the Testing Equipment until the technical data and drawings have been approved.
The cost of supplying drawings and specifications shall be borne by the supplier.

7.1.3.4 TESTS AT MANUFACTURERS WORKS FOR OUTDOOR TYPE VCB

General

Functional electrical, material, mechanical and hydraulic tests shall be carried out at manufacturers' premises. The extent and method of recording the results shall be agreed by the Purchaser in ample time to enable the tests to be satisfactorily witnessed or to make any changes to the proposed program of tests.

MATERIAL TESTS

The supplier shall provide test pieces free of charge as required to enable the quality of the material to be determined at the supplier's expense. Purchaser may at its own discretion and by specific arrangement accept certified particulars of tests carried out in the absence of his authorized representative.

TYPE TEST

Type tests are required to prove the general design of the offered equipments/ materials. The Tenderer shall submit the type test reports of the offered equipments/ materials from as per relevant clause.

ROUTINE TESTS

All equipments/ materials shall be subjected to routine tests as per latest version of relevant IEC/ BS or equivalent international standards as mentioned in the contract at the manufacturers works and shall include, but not be limited to, an operational test.

7.1.4 33KV PCM Panel

7.1.4.1 General

The panels shall be vermin and dust proof free standing type completely metal enclosed by sheet steel (minimum 1.62 mm thick) with necessary reinforcement color gray with appropriate spray painting. The approximate dimension of the PCM panel shall be 2100 mm (Height) x 600 mm (Width) x 700 mm (Depth) for 33 KV line and be 2100 mm (Height) x 800 mm (Width) x 700 mm (Depth) for power transformer while viewed from the front side, suitable for opening at the back by hinged door with locking arrangement. The panels shall be neatly and completely wired before shipment.

The work relating to protection, control and panels for 33/11KV Sub-stations shall comprise of development of elementary diagram, design, manufacture, test and supply of pre-wired control panels to be installed in the sub-station control room. The protection, control and panels are to be pre-wired with relays and meters in position. The elementary primary diagram shall be produced giving a clear representation of each protection, control and metering function. The standard design, drawing, manufacturing, testing & performance shall be in accordance to the IEC 62271-200 standards.

7.1.4.1 A 33 kV Protection, Control, Metering and Relay Panel For Power Transformer, each Panel comprising:

1.	Indicating analogue/digital Ampere meter flush mounting with dual scales options, 0-300/600A for connecting to current transformer ratio 300-600/5-5-5A for 10/13MVA Power Transformer.	3 (three) nos.
2.	Indicating analogue/digital voltmeter with six position selector switch flush mounting with scales 0-40 KV for connection to potential transformer ratio (33/√3)/ (0.11/√3)/(0.11/√3) KV, (50 Hz).	1 (one) set
3.	a) Numerical Programmable Multifunctional type MFM Meter It shall be capable of measuring and displaying MW, MVAR, PF, V, I, f, ø etc. distinguishing import and export operation.	1 (one) no.
	b) 3 phase, 4 wire, 3 element solid state, indoor type, multi tariff programmable KWh meter of class of accuracy 0.2 with the features for measuring the parameters viz. phase voltages, phase currents, system frequency, per phase & total KW with demand, KVAR, Power factor etc.	1 (one) no.
4.	Numerical programmable type Three Phase combined IDMT Over Current relay and Earth fault protection relay of 5 Amps, 50 Hz, 110V dc, 3 second operating time ratings having 3 (Three) over current units, one earth fault, over voltage ,frequency protection & Power measuring option with current setting range of the O/C & E/F relay shall be from **$0.1*I_n$ to $40*I_n$** (where I_n is relay nominal current) for both overcurrent and earth fault element. All O/C & E/F relays shall have both IDMT & DT (51) and Instantaneous (50) function along with IEC NI, VI, EI, LTI etc. curve setting capability. The relays are housed in a horizontal, flush mounting draw-out case (tropicalized) with self-reset trip relay (relaying 02 nos. NO contacts as spares) (Not to be included in Differential Relay).	1 (one) set
5.	Numerical programmable type Differential relay with REF inbuilt feature for 33/11KV, 10/13MVA Power Transformer. The relay(s) are housed in a horizontal, flush mounting draw-out case (tropicalized) with hand-reset trip relay (having 02 nos. NO contacts as spares).	1 (one) set

6.	Separate Auxiliary Flag Relays for Device/Self Protection of Power Transformer to be provided. The following Auxiliary Flag Relays shall be available - **OTA, OTT, WTA, WTT, BA, BT, OLTC Surge, PRD for main tank**, etc.	1 (one) set
7.	All necessary switches (Local and remote selector switch, TNC switch, etc.), CT, PT test terminal blocks, signaling set lamps, master trip relay, trip circuit supervision relay for each trip circuit coil, PT supervision relay, auxiliary relay, MCB, fuse and provision for lighting etc. terminal blocks, mimic diagram with circuit breaker control indicating switches and isolating position indicating switches, indicating lamps shall be provided to indicate "Spring Charge"/ readiness for closing and healthy trip circuit indicating readiness for tripping. The mimic and positions of circuit breaker control cum position indicating switch and isolator position indicating switch arrangement in the panel. Mimic diagram shall contain LED based Semaphore Indicator for Isolator/Breaker/Earth switch position. The Annunciator shall have 24 windows and have built in buzzer and AC/DC fail relay.	1 (one) set
8.	70 W, 230 V AC, Single Phase heater with thermostat and a visible light indicator which indicate the ''ON"- ''OFF" position of the heater	1 (one) set

7.1.4.1 B 33 KV PROTECTION, CONTROL, METERING AND RELAY PANEL FOR LINE FEEDER (INCOMING /OUTGOING), each comprising:

1.	Indicating analogue/digital Ampere meter flush mounting with dual scales option (0-600A/1200A) for connecting to the current transformer ratio 600-1200/5-5A for Line Fedder.	3 (three) nos.
2.	Indicating analogue/digital voltmeter with six position selector switch flush mounting with scales 0-40 KV for connection to potential transformer ratio (33/√3)/ (0.11/√3)/(0.11/√3) KV, (50 Hz).	1 (one) set
3.	a) Numerical Programmable Multifunctional type MFM Meter It shall be capable of measuring and displaying MW, MVAR, PF, V, I, f, ø etc. distinguishing import and export operation.	1 (one) no.
	b) 3 phase, 4 wire, 3 element solid state, indoor type, multi tariff programmable KWh meter of class of accuracy 0.2 with the features for measuring the parameters viz. phase voltages, phase currents, system frequency, per phase & total KW with demand, KVAR, Power factor etc.	1 (one) no.
4.	Numerical programmable type Three Phase combined IDMT Over Current relay and Earth fault protection relay with directional ,over/under voltage, frequency protection, feature of 5 Amps, 50 Hz, 110V dc, 3 second operating time ratings having 03 (Three) over current units and 01(one) earth fault with current setting of 50 to 200% and one earth fault unit with current setting range of the O/C & E/F relay shall be from **$0.1*I_n$ to $40*I_n$** (where I_n is relay nominal current) for both overcurrent and earth fault element. All O/C & E/F relays shall have both IDMT & DT (51) and Instantaneous (50) function along with IEC NI, VI, EI, LTI etc. curve setting capability. The relays are housed in a horizontal, flush mounting draw-out case (tropicalized) with self-reset trip relay (relaying 02 nos. NO contacts as spares).	1 (one) set
5.	All necessary switches (Local and remote selector switch, TNC switch, etc.), CT, PT test terminal blocks, signaling set lamps, master trip relay, trip circuit supervision relay for each trip coil, PT supervision relay, auxiliary relay, MCB, fuse and provision for lighting etc. terminal blocks, mimic diagram with circuit breaker control indicating switches and isolating position indicating switches, indicating lamps shall be provided to indicate "Spring Charge"/ readiness for closing and healthy trip circuit indicating readiness for tripping. The mimic and positions of circuit breaker control cum position indicating switch and isolator position indicating switch arrangement in the panel. Mimic diagram shall contain LED based Semaphore Indicator for Isolator/Breaker/Earth switch position. The Annunciator shall have 12 windows and have built in buzzer and AC/DC fail relay.	1 (one) set

6.	70 W, 230 V AC, Single Phase heater with thermostat and a visible light indicator which indicate the "ON"- "OFF" position of the heater	1 (one) set

7.1.4.1 C FOR 33 KV PANEL FEATURES:

Each PCM panel shall be equipped with the following:

a.) Instruments and Relays described elsewhere. All the relays shall be IEC 61850 protocol type for automation network of the 33/11kV Sub-station. In addition, numerical relay shall have sufficient contacts and shall be configured for Sub-station automation system operation. Intermediate auxiliary relay with sufficient spare contacts shall be used for controlling CB or any other switching devices through numerical relay in case of SAS operation.

b.) Status indicating discrepancy, Control switches for 33 kV Circuit Breaker with safety arrangements.

c.) **Illuminated Circuit Breaker and Isolator position indicators.**

d.) Signaling relays (annunciator, compact type) to yield audiovisual signals on faults and have reset feature.

e.) The inside of the panel will have all auxiliary relays to sense the operation of gas relays, over temperature, over current, differential relay operation failure of auxiliary voltage (DC & AC) etc. and to transmit for tripping and fault signaling.

f.) All inside equipment described and required shall be neatly arranged inside the panel.

g.) Thermostat control heater with status indicating illumination lamp (LED) shall be provided.

h.) The terminal blocks for connecting the incoming multi-core cables shall be placed at the bottom part and necessary glands/ opening shall be provided for the entry of the outside cables.

i.) Sufficient-working spaces shall be provided inside the panel between instruments and wiring for easy approach.

j.) All AC, DC auxiliary power circuits and PT secondary circuits entering the control panel shall be provided with MCCB. Separate MCBs shall be provided for DC supply to Power, Control and Alarm & Indication circuits.

k.) **Provision to hang danger/ caution board.**

l.) The PCM panel shall be SCADA/SAS compatible and hence all intelligent devices, digital energy meters etc. shall comply IEC 61850. All physical connections for control, measurement and status indication shall be made SAS ready.

m.) Sufficient spare terminals (**at least 10%)** in each terminal block.

n.) Stabilizing resistance and Metrocil of appropriate value by calculation for the high impedence REF scheme in PCM panel.

o.) There must be two trip coils, both trip coils shall be energized by separate contacts of trip relay for protection tripping. However, for manual tripping, only one trip coil can be engaged only.

p.) All CT Terminal blocks shall have shorting, isolating and jacking (test barrel) facility while PT terminal blocks shall have isolating and jacking (test barrel) facility.

q.) **Circuit Breaker control indicating switches and isolating position indicating lamps to indicate spring Charge/ Readiness for closing and healthy trip circuit indicating readiness for tripping.**

r.) Signaling /indicating lamps shall be LED type only.

s.) Auxiliary relays, trip relays with spare contacts, fuses.

t.) All necessary switches etc.

u.) Provision for lighting etc.

v.) 70W, 230V AC, 1-phase heater with thermostat and control switch and a visible light indicator which indicate the "ON"- "OFF" position of the heater.

w.) Mimic diagram along with semaphore for CB, DS and ES. Mimic diagram shall contain LED based Semaphore Indicator instead of moving Semaphore indicator. The color and size of the mimic shall be as described below:

33 KV	GREEN	½'' X 1/8''
11 KV	BLACK	½" X 1/8"

x.) Ferrule marking and color coding for all type of wiring shall be as follows:

1. **Ferrule marking:**
   - i. "A"- for differential protection circuit
   - ii. "C"- for O/C & E/F protection circuit
   - iii. "D"- for metering circuit
   - iv. "E"- for PT circuit
   - v. "L"- for Alarm & Indication circuit
   - vi. "S"- for fault recorder
2. **Color coding:**
   - i. "Black"- for phases of AC supply
   - ii. "White"- for neutral of AC supply
   - iii. "Grey"- for control circuit
   - iv. "Brown & Grey"- for (+) and (-) DC supply respectively
   - v. "Red, Yellow, Blue, Black"- for CT and PT circuit
   - vi. "Yellow with green strip"- for earthing

y.) Detailed schematic diagram of control circuit of PCM inside panel.

z.) Separate relay shall be used for over current, Earth fault protection and differential protection.

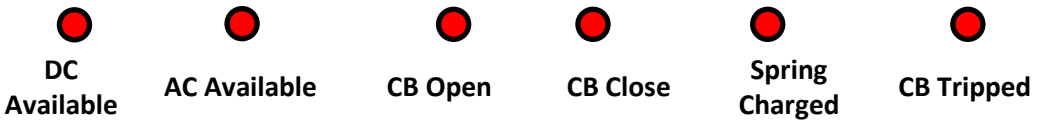
aa.) Annunciator shall have 12 nos. window for incoming and outgoing panel and 24 nos. windows for transformer panel with builtin buzzer.

bb.) **Necessary communication cable and software shall be supplied.**

cc) Inter tripping arrangement for 11 kV incomer (from 33 kV transformer feeder tripping) and for 33 kV transformer feeder (from directional tripping of 11 kV incomer or Stand by E/F tripping) shall be provided. All type of tripping shall be done through Master Trip relay.

dd) Transformer incomer PCM panel shall be equipped with AVR relay and tap changing control switch along with necessary indication system (Tap position, temperature etc.).

ee) Following LED Indicators including Lamp test facility shall be provided in the panel:



ff) Relay test plug facility shall be provided in 33 kV PCM panel along with licensed software (CD), communication cable and catalogues etc.

Besides the provisions of control, signal, protection and metering described, any other provisions to suit with the requirement of associated equipment of the concern feeder shall be provided. All meters and relays shall be flush mounting. There shall be panel-grounding terminal.

The bidder shall quote the particulars of various protective relays, meters, Auxiliary relays signaling relays, discrepancy control and position indicating switches etc. of the control panel, mentioning the names of the manufacturers.

7.1.4.1 D Alarms

The following alarm provision shall be made:

1. **33 KV TRANSFORMER FEEDER (24 window Annunciator)**

Main DC Fail	AC Fail	Main Relay-1 Faulty	Main Relay-2 Faulty	TCS-1 Unhealthy	TCS-2 Unhealthy
PT Failure	OTI High Alarm	OTI High Trip	WTI High Alarm	WTI High Trip	PRD Trip
MT Buchholtz Alarm	MT Buchholtz Trip	OLTC Surge Trip	O/C Trip	E/F Trip	87T Trip
87N/64 Trip	11 kV Inter trip	Spare	Spare	Spare	Spare

2. **33 kV Incoming/Outgoing Feeder (12 window Annunciator)**

Main DC Fail	AC Fail	Main Relay Faulty	PT Failure
TCS-1 Unhealthy	TCS-2 Unhealthy	O/C Trip	E/F Trip
67 Trip	67N Trip	Spare	Spare

7.1.10 E TESTS

Complete tests shall be made at the manufacturer's factory in accordance with the latest & relevant IEC 62271-200 standards. Among others, at least the following test shall be included:

a) Wiring Check
b) Functional check
c) Di-electric Test
d) Verification of protection

Test plugs shall be supplied. Test results of instruments and relays are to be provided along with the bid.

7.1.4.1 F Construction Details

Each panel shall be fabricated from steel sheet (minimum 1.62 mm thick) with necessary steel member reinforcement to make the structure self supporting. All joints are to be welded and ground to be made smooth.

Mounting brackets required shall be arranged inside the panel for mounting and fixing auxiliary devices and terminal blocks.

Instruments meters control switches and protective relays shall be mounted on the front panel only. Panel output mounting studs and support brackets shall be accurately located. Finished panel surface shall be free of waves and other imperfections exterior panel surfaces shall be send blasted, ground smooth, filled, panel and finished with gray enamel. Interior surface shall be sand blasted, primed and finished with glass white enamel.

The panel shall be designed to have bottom closed and with an adequate number of 50 mm knock outs provided to facilitate entry of control wires and cables. The back end closure of the panel shall be equipped with hinged formed door. The door shall be rigid and shall be equipped with three point latches.

The supplier shall furnish internal panel wiring and circuit protection. The supplier shall provide one 70W, 240, AC strip heater in the panel. The heater shall have a separate switch. Engraved name plate shall be provided at the top of the front enclosure.

7.1.4.1 G PANEL WIRING

The supplier shall provide internal wiring and connections, in accordance with the requirements of the following paragraph.

All wiring used within the panel shall conform to the requirements of these specifications and shall be installed and tested at the factory. All wiring shall be neatly and carefully installed in wring gutters of raceway wiring raceway shall be plastic wiring duct with covers. Instrument wiring on the panel shall be numbered sequentially from the sources to the panel instrument and the number of the source equipment shall be used as a prefix for the individual wire numbers, wiring shall be terminated at terminal blocks plainly lettered or marked in accordance with the manufacturer's connection diagrams.
Sufficient clearance shall be provided for all the leads. All the leads for external circuit wiring shall be connected to grounded terminal blocks located for convenient connection of external circuits.
Splices will not be permitted in panel wiring.
All the terminal block connections shall be made with ring type lugs. Pre-insulated ring type terminals with crimp guide or per-insulated slotted spring spade terminals shall be provided on devices equipped with individual fitted covers.
Arrangement of circuits on terminal block shall be such that all the connections for one circuit, plus any spare conductors, shall have terminal blocks adjacent to the split and shall be provided with wiring required to interconnect the split unit.
The size of the wiring used in the panel shall be conform to the following requirements:

a.) Ampere meter and current transformer circuit: 6 Sq.mm (RYB color code shall be used)
b.) All other wiring: 2.5 Sq.mm.

Closing circuit of the PCM panel shall have Interlocking mechanism with DS/ES switch. DC/AC supply of the 33 kV breaker panel shall be supervised through corresponding PCM panel. Single point grounding of the neutral of CT/PT circuits shall be ensured. It is always recommended that the neutral of CT/PT is grounded at the CT/PT junction box end. Ferrule marking and color coding shall be as per clause **"7.1.4.1 C 33 kV PCM Panel Features"**

7.1.4.1 **H POWER SUPPLY DISCONNECT**

Each panel mounted devices requiring AC or DC supply, shall have disconnecting devices from the power supply in the tripped or open condition.
The MCCB's used in DC control circuit shall have a rating of 6 A and 250 V. The tumbler switch in the heater shall have the same rating.
Each S/S will be equipped generally with the following:

3 (Three) phase MCCB for incoming from Auxiliary transformers	- 1 (one) no.
MCCB for incoming DC for battery	- 1 (one) no.
MCCB for AC outgoing	- 10 (ten) nos.
MCCB for DC outgoing	- 10 (ten) nos.

The fuses shall be modular type with Bakelite frame and reinforced retaining clips.

7.1.4.1 I INDICATING LIGHTS

Indicating lights of LED type shall be have transparent glass lenses and appropriately sized resister.

7.1.4.1 J TERMINAL BLOCKS

Terminal blocks shall provided with white marking strips, circuit designation by the supplier shall be inscribed on the marking strip with black print, terminals in a quantity of not less than 25 percent of the interconnected terminals in excess shall be provided on each terminal block for circuit modifications and for termination of all conductors in multi-conductor cable.
All CT Terminal blocks shall have shorting, isolating and jacking (test barrel) facility while PT terminal blocks shall have isolating and jacking (test barrel) facility.

CT, PT, Control, Alarm etc. wiring shall be separately grouped or segregated.

All physical connections for control, measurement and status indication shall be made SAS ready hence Terminal Blocks shall be kept reserved if necessary.

Terminal block shall be grouped in each panel for easy accessibility unrestricted by interference from structural members and instruments. Sufficient spaces shall be provided on each side of each terminal block to allow an orderly arrangement of all the lead to be terminated on the block.

7.1.4.1 K INSTRUMENTS AND DEVICES

Indicating instruments shall be semi flush panel type with 1% percent accuracy class except for energy meters which shall be of 0.2. They shall be approximately 100 mm square with black 240 degree scales on a white back ground.

All AC instruments shall be designed for operation on 5A current transformers secondary and 110V (50 Hz) potential transformer secondary.

7.1.4.1 L TRIP RELAYS

Following shall be the main features of a high speed tripping relays:

All tripping relays shall be of the heavy duty type suitable for panel mounting and shall have operating coils which are rated sufficiently to operate in conjunction with series flag relays. If necessary, normally closed contacts in series with the relay operating coil, shall be delayed for a period which will allow series flag relays to operate satisfactorily. All other tripping contacts should be instantaneous i.e. no intentional time delay. The operating time shall not exceed 10 milliseconds at rated voltage. The operating range of the relay shall be from 70% to 120% of rated voltage. Electrical reset facilities shall be available for operation, from remote and supervisory controls. High speed tripping relays shall prevent closing of the associated circuit breakers until reset. Wherever the tripping relay contacts need to break the d.c. current, sufficiently rated magnetic blow out contacts or such approved means shall be used.

Trip Relay shall be of following types:

a. Self-reset type for O/C, E/F protection
b. Hand & Electrical reset type for Differential, REF and Transformer Self-protection
c. Operating Coil Voltage: 110 V DC (No series resistor allowed)
d. Shall have in built freewheeling diode.

7.1.4.1 M SUPERVISION RELAYS

7.1.4.1 M.1 **Trip Circuit and Protection Supply Supervision**

The trip circuit supervision function shall be a seperate relay and independent of control and protection unit provided in the switchgear. Trip circuit supervision relays shall be provided to monitor each of the trip circuits of all 33kV circuit breakers and each relay shall have sufficient contacts for visual/audible alarm and indication purposes. The trip circuit supervision scheme shall provide continuous supervision of the trip circuits of the circuit breaker in either the open or closed position and independent of local or remote selection at the local operating position. Relay elements shall be delayed on drop-off to prevent false alarms during faults on dc wiring on adjacent circuits, or due to operation of a trip relay contact. Series resistances shall be provided in trip supervision circuits to prevent mal tripping a circuit breaker if a relay element is short circuited. Relay alarm elements shall be equipped with hand resetting flag indicators.

Trip circuit supervision relay (TCSR) shall supervise not only the trip coil but also the whole trip circuit during both breaker open and close position (pre-close & post-close). Both trip circuits shall be supervised by separate TCS relay. TCS function of main relay shall be avoided for supervision.

7.1.4.1 M.**2 D.C. Supply Supervision**

Supervision relays are required for each protection supply, Main protection, Back-up and Trip Relay Reset. Similarly for each trip circuit supply and for each alarm/ indications supply. These supervision relays are to be independent of alarms from the trip circuit supervision scheme so that the operator can clearly differentiate via the available alarms between loss of supply due to a blown fuse / tripped MCB and failure of a trip circuits supervision /faulty supervision wiring.

DC supply supervision shall be performed by the built in AC/DC fail relay of the Annunciator. Hence, the Annunciator shall be powered by dual source (with internal/external AC/DC changeover switch).

7.1.4.1 N SPECIFICATION OF 110V, 3 x 5(6) A, 3-PHASE, 4-WIRE, 3-ELEMENT, INDOOR TYPE MULTI-TARIFF PROGRAMMABLE METER WITH ASSOCIATED INSTRUMENT TRANSFORMERS ENCLOSED IN METERING PANEL.

7.1.4.1.N. A GENERAL

The meters are required for the purpose of energy metering of medium/high/extra-high voltage consumer metering at 132 kV or 33 kV or 11kV level. KWh is the unit for the purpose.

System voltage	Nominal service voltage 110V (PT Secondary), 3 phase 4wire, solidly grounded neutral at source, maximum system voltage 120V line to line.
System frequency	50 Hz

7.1.4.1.N. B SPECIFICATION OF 110V 3 x 5(6)A, 3-PHASE, 4-WIRE 3-ELEMENT, INDOOR TYPE MULTI TARIFF PROGRAMMABLE DIGITAL ENERGY METER

The consumer meters are required for the purpose of energy metering of low voltage consumer who purchases power at 11 kV/33 kV line through PT & CT. kWh is the unit for revenue purpose.

System voltage	:	Nominal service voltage 110V, 3 phase 4 wire, solidly grounded neutral at source, maximum system voltage 120V line to line.
System frequency	:	50 Hz
Standard	:	The Energy Meter should be designed, manufactured and tested in accordance with IEC 62052-11, 62053-22 and 62053-23 or ANSI C 12.16, 12.10 (latest publication) or specified in this specification
Installation	:	Indoor Type
Type	:	Solid state.
Application	:	Registration of KWh (Peak & off-peak), Total KVarh(Q1+Q4), KW on 3- phase, 4-wire supply for balanced & unbalanced load (unidirectional). Peak 17.00-23.00. hrs and off peak 23.00-17.00 hrs (programmable) Bangladesh standard time. The software for Time of Use (TOU) shall be so developed to accommodate future tariff and can be customized, if the purchaser changes the tariff. The software shall be compatible with Windows operating system.
Connection	:	3-phase 4-wire, solidly grounded neutral.
Nos. of element	:	3 (Three)
Rated current	:	Basic current 5 amps and maximum current ≥6 amps.
Multiplication factor	:	The following shall be inscribe on the mater. Dial reading X CT ratio X PT ratio = Actual reading in KWh.

Register : Solid state LCD display type register. The display shall be programmable, automatic and include:

- Meter ID
- Time & date
- Cumulative KWh (Peak & off-peak)
- Cumulative Total KVarh (Q1+Q4)
- Maximum demand (KW) with time & date
- Cumulative Maximum demand (kW) for billing month.

Maximum demand (MD) in kW shall be registered using the technique of cumulating on integration period controlled by built-in process and the MD shall be continuously recorded and the highest shall be indicated. The highest MD shall be added to the cumulative store, which shall be automatically initiated after an interval of one month / one billing period by means of built-in timing device.

- Integration period: 30 (thirty) minutes.
- Number of MD reset (Automatic& manually).
- Average PF for billing period.

Instantaneous:

- Phase voltage with indication
- Phase amps with direction.
- Power factor (average).
- Demand (KW)
- Voltage phase angel (each phase) or P.F. Angle(each phase)
- Current phase angle(each phase)
- Tampering indication in the register.

Memory storage : The meter shall have sufficient capacity (minimum 400 KB) to store the following readings and data in non-volatile memory even in case of power failure.

- Equipment identification codes, security codes and access codes.
- Number of power interruption with date & time (minimum 100 events).
- Latest power failure time & date
- Date & time of meter tempering. (Voltage & Current missing, demand reset , time change).
- Event logs
- Current & Previous registered in month KWh (Peak & off-peak), Total KVarh (Q1+Q4)
- Current & Previous month registered with maximum KW demand since last MD reset with time and date of its occurrence.

The meter must have sufficient capacity to store data at 30 (thirty) minutes interval for at least 90 (ninety) days.

- Load Profile data [kWh, KVarh (Q1+Q4)
- Phase voltage or Vh
- Phase amps or Ah

Accuracy class : Accuracy class is 0.2 (point two)

Number of digit Minimum 5 (Five) integer with 1 (One) decimal (Total 6 digit).

Type of Display Solid-state LCD display.

Time switch : The time switch shall be built-in type and shall be designed to perform a present cycle of operation. Time switch shall reset MDI

		at the end of every month (billing period) automatically. In the event of failure of power supply and battery, at the same time set memory shall not be lost i.e. the set program shall be recorded in non-volatile memory. The maximum error shall be kept within ± 1 (one) second per day. Time error adjustment facility shall be provided.
Battery reserve	:	Each time switch must be provided with lithium battery which allow the switch to function for a period of not less than 10 (ten) years. The guaranteed life of the battery should not be less than 10 (ten) years and shall have provision for easy replacement. The shelf life of the battery should be minimum 15(fifteen) years or more.
Construction	:	The meter shall be completely self-contain round socket or enclosure type. The meter cover shall be made of polycarbonate/acrylic /phenolic /resin and socket cover shall be made of metal polycarbonate/ acrylic /phenolic /resin. The meter cover and socket /enclosure shall be provided with security sealing provisions to prevent unauthorized access to the internal meter works and socket /enclosure sealing shall be designed to accommodate both padlock and wire type seal. IEC meters shall be minimum IP51. The ANSI Standard meter shall be effectively sealed to prevent entrance of rain and dust into its internal parts. The meter shall pass Rain test described in underwriter's laboratory standard UL-50 (USA) for type 3 enclosures. A general purpose finish of class 1 as specified in section 7 of ANSI C12.10 shall be provided for the meter and it shall meet the requirement of weather simulation test (Sec. 7.2.1 of ANSI C12.10) and salt spray test (ASTM B117). It shall be designed to operate continuously for the normal life of the meter in unsheltered outdoor tropical location exposed to the elements without corrosion or other damage to parts to adversely affect meter accuracy or reliability.
Enclosure for IEC Standard Meter		The meter shall be surface mounted in PCM panel with necessary wiring. The enclosure box should be made either of high quality flame retardant ABS Resin of minimum 3 mm thickness or of galvanized sheet steel of minimum 1.22 mm (18 SWG) thickness or of auto extinguishable, shockproof and UV resistant, hot molded glass reinforced polyester of minimum 3 mm thickness. The box shall have hinged front door with one toughened glass window or transparent UV resistant Polly carbonate to enable easy reading of meter. The metering box shall be weather proof, dust proof, rodent and inspect proof in accordance with enclosure classification IP54. Service cable entry and exit will be sides of the box and 40 (forty) mm diameter hole with black PVC conic cable gland shall be provided for side entry & exit for this purpose. All material parts shall have anti-corrosive protection. All materials shall be designed, manufactured and tested as per IEC or equivalent International standards except as mentioned. The front door shall be removable and provision must be made for sealing in the closed position.
Socket	:	Meter sockets shall be suitable for installation of offered type meter.

Meter sockets shall be 3-phase, 4-wire wye, 600 volt class, made from 16 gauge sheet metal. Meter sockets shall be similar except as described below. Meter sockets shall approximately 14″ (35.6 cm) H×9″(22.9cm) W×4″ (10.2 cm) D and rectangular in shape. Sockets shall be the same size as 1-phase sockets and terminal blocks shall be interchangeable. Sockets shall be ring less type, sealing latch to be stainless steel and have adequate means for socket grounding. Meter socket shall have a 2″(5 cm) Diameter top opening complete with a 1- ¼″ (3.2 cm) hub. Meter socket shall have 4 knockouts with a range up to 2″(5 cm) Diameter, one on the back, one in the bottom and one in each side. Meter socket shall comply with ANSI C 12.6, 12.10

The Socket shall have written permanently (not in paper printed) "connection diagram" distinctly marked in addition to all standard data.

Terminal	:	Socket connected type/ Non-symmetrical, bottom entry, front connection, and connection type with extended terminal cover: Minimum 10 Terminals to accommodate up to 06 sq. mm size of cable. The terminal cover for the offered energy meter shall be extended type, and which can be sealed independently. There shall be free space between bottom of the terminal and the bottom of the terminal cover.
Connection	:	3-phase, 4-wire solidly grounded neutral.
Service life of meter	:	Shall be minimum 15 (fifteen) years.
Visual indication of operation	:	Pulse indicator on the front of meter as per meter constant.
Special condition	:	a) The factory calibration conforms to relevant IEC or equivalent international standard. LCD display shall be shown consecutively and continuously one after another. The display shall be automated i.e. no external means shall be required to see the display. Each display shall last for at least 5 (five) sec. b) Meter Electronic Circuit biasing voltage shall have to be ensured from each phase to phase and each phase to neutral and minimum basing voltage 40V.
Meter Sealing	:	The Energy meter body will be hermetically sealed or ultrasonically welded to avoid unauthorized opening of meter cover.
Communication port	:	The meter must be provided with a suitable communication port to allow down loading of desired information stored in the meter to a PC via hand held data logger as per IEC 1107 or equivalent standard.
Remote Communication	:	The meter shall be equipped with external GSM-GPRS Modem, which will be able to interface with RS232/RS485 for data communication with the central server from meters, having all accessories like power supply adapter, necessary connecting cables, antenna with minimum 2.5 meter extension cable, connectors, enclosure box with fixing materials etc. The modem shall be compatible with existing AMR system of NESCO.

7.1.4.1.N.C TAMPER AND FRAUD PROTECTION FEATURE:

The meter shall have the following features to prevent/detect tamper and fraud:

- **Phase Sequence Reversal:** The meter should work accurately irrespective of phase sequence of supply.
- **Missing Potentials:** The meter shall be capable of detection occurrence of missing potential of one phase or two phase(s), which can happen due to intentional/accidental disconnection of potential link(s).
- **Terminal cover** must have micro-switch provision to monitor unauthorized

opening. Opening of terminal cover shall trigger an event to be recorded in the event log memory.

- **Software Access:** Software access for configuration and setting of the meters.

7.1.4.1.N.D TECHNICAL FEATURE

- The body cover and socket / enclosure shall be provided security sealing provisions to prevent unauthorized access to the internal meter works.
- The meter shall be provided with connection diagram.
- The data access should be protected by minimum 3(three) steps software password in meter.
- The meter shall have provision of phase to phase and each phase to neutral biasing.
- The meter shall have minimum biasing voltage of 40V.
- The meter and socket/enclosure shall have provision of earthing.
- Meter must operate and accurately register demand and energy when service voltage is applied across any two of the three input terminals or when service voltage is applied from any input terminal to neutral. Meter will continue to operate even the neutral is missing.
- The meter and socket/ enclosure must be the same country of origin other wise the bid will be rejected.
- The registration of KWh (Peak & off-peak) on 3-phase, 4-wire supply for balanced & unbalanced load will be unidirectional. i.e. if one, two or three phase supply is/are reversed, it will take the absolute (kWh-del) + absolute (kWh-rev) and will add them together as total 3-phase KWh.
- The meter shall be equipped with remote GSM & PSTN communication option.
- It has to be ensured that the meter complies IEC61850 for SAS operation. If required, internal/external module as protocol converter can be used for the compatibility with IEC61850
- The meter shall have permanently print nameplate distinctly marked with the following in addition to all standard data:
    1. The word "NESCO" and insignia of NESCO.
    2. Voltage and current rating.
    3. Frequency.
    4. Number of element, number of wire and multiplication factor.
    5. Accuracy class.
    6. Year of manufacture.
    7. Serial number.
    8. Name of manufacturer.
    9. Meter constant.

7.1.4.1. N. E Display of measured values/ Meter Display

- The Sequence of LCD display should be user programmable.
- The contrast setting of LCD display should be visible in different lighting environment and distinctly visible in broad daylight.
- The meter should be of displaying time and date, the direction of energy i.e. as import/export or +/-, active tariff and internal fault indicators.
- There should be up to three groups of display to priorities the display. Each showing a programmable function group.

7.1.4.1.N. F Meter Parameterisation Software

- The parameterisation software must run on Windows operating environment.
- The software must be protected by software keys to control duplication and installation.
- The software should have a customizable printing feature by task list.
- The meter must be able to display or record meter ID, Program, Programmer ID, C. T. ratio, V. T. ratio, Total (KWh, KVarh, KVAh, KW, KVar, KVA, P.F); per phase (voltage, current, KW, KVar, KVA, P.F, phase voltage angle, phase current angel); Load profile having minimum 8(eight) Channels data stored in different interval for 90 days.
- Tamper feature: The meter must have Errors & Warnings codes, History log and Event log(minimum 400events) to record date & time of all power outages, demand resets, time change.
- In addition, each software key must bear a unique user ID and that is not transferable to another PC that has different user ID.
- The Meter should be able to display the phasor diagram.
- The software for Time of Use (TOU) shall be compatible to accommodate future tariff and can be customized, if the purchaser changes the tariff .The software shall be compatible with Windows operating system.
- The Meter must be provided with meter passwords to secure communication between meter software and meter having minimum 3(three) access levels.
- The AMR Software have to be compatible with NESCO's existing AMR System. The Tenderer have to develop the total AMR System with existing and supplied AMR Solution. In this case the tenderer have to provide their meter protocols so that all exiting meters and supplied meters data will be downloaded and managed in a single AMR System.

7.1.4.1.N. G EXTERNAL MODEM WITH ACCESSORIES

GSM/GPRS modem with RS-232/RS-485 ports, meter interfaced power supply, connection cables, antenna with minimum 2.5 meters cable, mounting facilities, enclosure (if necessary). The modems will be capable of GSM and GPRS connectivity simultaneously. For GSm configuration the AT command will be available and for GPRS communication the APN, reset time, username, password, port number, etc. are configurable. The modem will have the following specification.

Interruption (< 1 ms), RS-232 (at least 1), GPRS class 10, operating band 900/1800, auto reset capability (with phone call, SMS). The modem will be robust, durable and compatible with the employers existing service condition.

7.1.4.1.N. H Manufacturer

All the energy meter shall be supplied from any of the following manufacturers:

a) Siemens, Germany/Switzerland.
b) AEG, Germany.
c) ABB, Switzerland/Finland
d) Toshiba , Japan
e) Elster, USA/Romania
f) Landis Gear, Switzerland.
g) Honeywell , USA

Note: **Related software & accessories if required for Energymeters is within the scope of supply.**

7.1.4.1.**O PROTECTIVE RELAYS**

All Protective relays shall be numerical programmable type and shall comply relevant IEC or equivalent international standard. Contract arrangement of the relays should conform to the requirements of the diagram. All the relays shall be IEC 61850 protocol type for automation network of the 33/11kV Sub-station.

All the protective relays shall be supplied from any of following manufacturers: ABB (Switzerland/Finland/Sweden)/Siemens (Germany/ Switzerland)/Alstom (France/UK)/ Schneider (france/UK) /SEL, USA.

Note: **Related software & accessories if required for Relays is within the scope of supply.**

7.1.4.1.**P. AUXILIARY RELAY**

Auxiliary relays with sufficient contact shall be used for transformer self-protection (OTA, OTT, WTA, WTT, BA, BT, OLTC Surge, PRD for main tank. etc.). Apart from these relays, each 33 kV PCM Cubicle shall be provided with 1 (one) set separate Auxiliary and signaling relay and wiring with fuses. This relay shall be used for control & monitoring of CB, DS and ES through numerical relay/BCU in case of SAS operation.

7.1.4.1.Q. Annunciator

Each PCM panel shall be equipped with 1 (one) set Annunciator with sufficient windows (LED type with blinking facility) to display the alarms as per requirement. Annunciator shall have built in buzzer and AC/DC fail relay and shall be powered by dual source (with internal/external AC/DC changeover switch). Buttons for Accept, Mute, Test, Reset etc. shall be provided in the Annunciator.

7.1.4.1.**R. INDICATING AMMETERS**

Each 33 KV PCM Cubicle will be provided with 3 Ammeters (1 for each phase), analogue/digital type.

7.1.4.1.**S. INDICATING VOLTMETERS**

1 (one) voltmeter with a multi-selector switch (phase to phase, phase to neutral, off) shall be installed on 33 KV transformer panel.

7.1.4.1.**T. MIMIC BUS**

LED based Semaphore Indicator showing the position (open/close) of Circuit Breaker, Isolator and Earth Switch shall be inserted within the mimic bus.

Mimic bus material shall be brass, bronze or copper with enamel finished or anodized aluminum or plastic. The mimic bus and included symbols shall be shaped, colored and located as international standard. Light indicator showing position (opening/closing) of circuit breaker, DS, ES shall be installed.

The mimic bus shall be attached to the panel by mechanical devices, not with adhesive. Attachment shall be closely spaced to hold all parts of the mimic bus firmly to the panel face.

Mimic bus shall be provided with the following dimensions and color code:

Voltage	Bus Color	Thick	Dimension (mm)
33 KV	Green	3	12

Note : One set of relay testing plug shall be supplied with protection, metering and control panel which will be included in the quoted price. Each cubicle shall be complete according to the specification, features and bill of materials but not limited to these items; the cubicles should be complete in all respects, to make it fully operational.

7.1.4.1.V INFORMATION REQUIRED

The Tenderer/ Manufacturer as per tender requirements shall provide all information. Besides these, the following information/Documents has to be submitted along with the tender:-

(a) Manufacturer's drawing showing Outline dimension & General arrangement drawings of offered type equipment.
(b) Manufacturer's Printed Catalogue describing specification and technical data of the offered type equipment.
(c) The Tenderer/Manufacturer shall submit with the bid the testing procedure & list of testing/measuring equipment, meters etc. used for Factory test witness.
(d) Construction, Installation, Operation & Maintenance Manual.
(e) Manufacturer's valid ISO Certificate.

(f) IEC 61850 Test Certificate for all Protective Relays.

7.1.4.2 APPROVAL OF DRAWINGS AND SPECIFICATIOS:

Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc, along with Outline, Dimensional, Cross-sectional & General arrangement drawings, Installation diagram, printed catalogue describing the type/ model of offered PCM cubicle, Protective relays, Energy meters shall be submitted to the Superintending Engineer, Design & Inspectoin, NESCO Ltd, Rajshahi by the Bidder. The submitted Design, Drawing diagrams, Specification and Technical Particulars & Guarantees etc must be approved by Design & Inspectoin, NESCO Ltd, Rajshahi prior to the manufacturing of the goods.

The Bidder shall have to submit 3 (three) sets of the same for Approval within 15 days from the date of signing Contract. The bidder shall also submit one set reproducible tracing of the above drawings in soft format.

No work shall be performed in connection with the fabrication and manufacture of the Testing Equipment until the technical data and drawings have been approved.

The cost of supplying drawings and specifications shall be borne by the supplier.

7.1.4.3. W TESTS AT MANUFACTURERS WORKS FOR PCM PANEL

General

Functional electrical, material, mechanical and hydraulic tests shall be carried out at manufacturers' premises. The extent and method of recording the results shall be agreed by the Purchaser in ample time to enable the tests to be satisfactorily witnessed or to make any changes to the proposed program of tests.

MATERIAL TESTS

The supplier shall provide test pieces free of charge as required to enable the quality of the material to be determined at the supplier's expense. Purchaser may at its own discretion and by specific arrangement accept certified particulars of tests carried out in the absence of his authorized representative.

TYPE TEST

Type tests are required to prove the general design of the offered equipments/ materials. The Tenderer shall submit the type test reports of the offered equipments/ materials from as per relevant clause.

ROUTINE TESTS

All equipments/ materials shall be subjected to routine tests as per latest version of relevant IEC/ BS or equivalent international standards as mentioned in the contract at the manufacturers works and shall include, but not be limited to, an operational test.

7.1.5 TECHNICAL SPECIFICATIONS & REQUIREMENTS OF 11KV VACUUM CIRCUIT BREAKERS WITH PROTECTION, CONTROL & METERING CUBICLES

7.1.5.1 GENERAL

One panel structure and enclosure assembly with supports, Busbar compartments, Circuit breaker compartment, LV compartment, V.T Compartment, Cable termination compartment, earthing, Mechanical operating/ Indicating devices, Interlocks, LV compartments with all wiring MCBs, Fuses,Links, Auxilary relays, Supervision relays, Heater, Humidistat, Indications lamp, control and selector switches, Local and remote switches, TNC swithes, Interlocking facilities, Voltmeter with selector switches, Terminal blocks, CTs/ VTs etc. as required for the complete unit for control and protection HV side requirement etc. The panel shall be suitable for connecting to 10/13.33 MVA or 20/26MVA power Transformer in accordance with the drawing.

1.	Installation	Indoor
2.	Type	Vacuum, Draw-out Pattern Cubicle
3.	Bus-bar Scheme	Single bus bar
4.	Construction	The structure of the cell is made of special sheet clad with convenient treatment which in all respect resists the effect of indoor humid tropicalized climate.
5.	Mounting	Trolley Type/ Floor Mounting
6.	System	3-Phase, 3-Wire with earthed Neutral
7.	Nominal System Voltage	11 kV Phase to Phase
8.	System Highest Voltage	12 kV Phase to Phase
9.	Rated short duration power frequency withstand voltage	28 kV (rms)
10.	Rated Lightning Impulse withstand voltage	75 kV (peak)
11.	Frequency	50 Hz
12.	Rated normal current:	
	a) 10/13.33 MVA power transformer 11kV Incoming & Bus Coupler	1600 A
	b) for 11KV outgoing feeder with 1600A bus bars	630A
13.	Temperature rise of any part of the switchgear & control gear	Shall be as per the latest revision of relevant IEC standards.
14.	Rated Short-time withstand Current (Rated short circuit breaking current)	31.5 KA for 3 Sec.
15.	Rated Peak withstand Current (Rated short circuit making current)	80 KA
17.	Opening Time	≤ 0.05 Sec.
18.	Breaking Time	≤ 5 Cycle
19.	Rated supply voltage of closing & opening devices and auxiliary circuits.	110 Vdc & 240/415 Vac
20.	Rated supply frequency of closing & opening devices and auxiliary circuits.	50Hz.
21.	Rated Operating Sequence	0-0.3sec-CO-3Min-CO
22.	Degrees of Protection by enclosures (IP)	IP4X as defined in IEC 60529
23.	All Current Carrying Parts of VCB	Shall be made of copper
24.	Dimensions of all 11kV Cubicles (including bus bar height and size)	Shall be matched in all respect.
25.	Standard	Design, Manufacture, Testing and Performance shall be in accordance to the IEC-62271-200 and other related IEC standards.

7.1.5.2 11kV TRANSFORMER INCOMING CUBICLES , EACH PANEL COMPRISING:

10/13.33 MVA Power Transformer

1.	Type of Bus Bar	HDHC copper 1600A.
2.	Bus Bar Scheme	Single Bus Bar
3.	Type of Circuit Breaker	Vacuum
4.	Number of Phases	3 (Three)
5.	Operating Mechanism	For Circuit Breaker operation, both spring-operated and stored-energy mechanisms shall be available. With manual Power/Manual, Trip Free, Electrically Spring wound operated by 240 Vac and shunt trip by 110 Vdc from storage battery, vertically disconnected horizontal draw-out type with 2 Nos. Trip coils. The operating sequence OPEN-CLOSE-OPEN is stored in the springs.
6.	Rupturing Capacity.	600 MVA, Symmetrical.
7.	Breaking Time.	5 Cycle Maximum
8.	Continuous Current Rating.	1600 A
9.	All Current Carrying Parts of VCB.	Shall be made of Copper
10.	AC Control Voltage.	240 ± 10% Volts
11.	DC Control Voltage.	110 ± 10% Volts
12.	Cable and Boxes for Incoming.	Suitable for size 2x1Cx300 mm² XLPE 11kV cables per phase with copper conductors.
13.	10/13.33 MVA Power Transformer: Single Phase Bushing/Ring type Current Transformer with Ratio 600-1200/5-5-5A power transformer of burden & accuracy class-20 VA & 0.2 (for measurement) and 30VA & 5P20 (for protection). (Characteristics: Epoxy resins insulated and double windings, butyl rubber type. The epoxy resin should be ultraviolet stabilized, fungus resistant & high tracking resistance, short time current ratings 31.5KA for 3 second & extended current ratings 120% of the rated value, secondary double winding, installation shall be in the panel).	3 Nos. (A Phase, B Phase & C Phase Shall have Individual CT)
14.	Numerical, programmable IDMT & Instantaneous type Over Current and Earth fault protection relay and separate Standby Earth fault and all other necessary features for transformer incoming feeder protection. The current setting range of the O/C & E/F relay shall be from **$0.1*I_n$ to $40*I_n$** for both overcurrent and earth fault element. All O/C & E/F relays shall have both IDMT, DT (51) and Instantaneous (50) function along with IEC NI, VI, EI, LTI etc. curve setting capability. O/C & E/F relays for 11 kV Transformer Incoming Cubicles shall have directional, over voltage, under voltage, frequency protection, power measuring features as well.	1 set
15.	Master Trip & Trip Circuit Supervision (for each trip coil) relays.	1 Set
16.	All necessary Auxiliary & Signaling relays.	As required.