



Invitation for Bids

Date:	13 October 2026
Loan No. and Title:	59002-001 PAK: Second Power Transmission Strengthening Project (PTSP-II)
Contract No. and Title:	ADB-PTSP-II-A-2026: Procurement of Plant - Design, Manufacture, Supply, Installation, Testing & Commissioning of 500 kV Double Circuit Quad Bundle Transmission lines for: i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)
Deadline for Submission of Bids:	10 December 2026, 11:00am (Pakistan Standard Time)

1. **National Grid Company of Pakistan (NGC)** has received financing from the Asian Development Bank (ADB) toward the cost of **Second Power Transmission Strengthening Project (PTSP-II)**. Part of this financing will be used for payments under the Contract named above. Bidding is open to the Bidders from eligible source countries of ADB. This contract will be jointly financed by NA. The eligibility rules and procedures of ADB will govern the bidding process.
2. The **National Grid Company of Pakistan (NGC)** (“the purchaser”) invites sealed bids from eligible Bidders for **Procurement of Plant- Design, Manufacture, Supply, Installation, Testing & Commissioning of 500 kV Double Circuit Quad Bundle Transmission lines for (i) Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) and (ii) Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)**. The works mainly include design, manufacturing, delivery, installation, testing, commissioning, and completion of works and services at turnkey basis.
3. **Open Competitive Bidding (International advertisement)** will be conducted in accordance with ADB's [Single-Stage: Two-Envelope](#) bidding procedure and is open to all Bidders from eligible countries as described in the Bidding Document.
4. Only eligible Bidders with the following key qualifications defined in the Bidding Document may participate in this bidding:

Participation as a main contractor, Management contractor or Joint Venture / Consortium partner, in at least one (01) contract that has been satisfactorily and

substantially completed between 1st November 2016 and bid submission deadline where the value of the Bidder's participation exceeds 100.5 million USD.

And

Participation and successful implementation, as a main contractor, Management contractor or Joint Venture / Consortium partner, in the following technical requirements, within the last ten (10) years which has been in operation for at least last two (2) years as of bid opening date.

- i. Detailed survey/Check Survey of a 380kV or higher voltage transmission line having a minimum line length of 50km.
- ii. Sub-Soil Investigation for a minimum of 500 Linear meters.
- iii. Civil Works/Construction of at least 150 conventional tower foundations for a 380kV or higher voltage transmission line.
- iv. Erection of at least 150 towers of a 380kV or higher voltage transmission line.
- v. Stringing of a 380kV or higher voltage bundled transmission line having a minimum line length of 50km.
- vi. Testing and Commissioning of a 380kV or higher voltage bundled transmission line having a minimum line length of 50km.

Further details are described in the Bidding Document.

5. To obtain further information and inspect the Bidding Document, Bidders should contact:

Director General (Procurement)

National Grid Company of Pakistan (NGC)
8th Floor, Shaheen Complex, Egerton Road, Lahore, Pakistan
Postal Code: 54000
Telephone: +92-42-99202597
Facsimile number: + 92-42-99202173
E-mail address: dg.procurement@ngc.gov.pk

6. A Pre-Bid meeting will take place on the date, time and place as follows:

Date: **29 October 2026**

Time: **11:00am** (Pakistan Standard Time)

Place: 8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan

To purchase the Bidding Documents in English, eligible Bidders should:

- write to address above requesting the Bidding Documents for “**ADB-PTSP-II-A-2026: Procurement of Plant- Design, Manufacture, Supply, Installation, Testing & Commissioning of 500 kV Double Circuit Quad Bundle Transmission lines for (i) Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) and (ii) Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)**”

- Pay a non-refundable fee of **PKR 5,000 or USD equivalent** by cashier's cheque, pay order or demand bank draft in favor of Chief Engineer (Material Procurement & Management), NTDC, 8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan.
- The document may be collected in person or may be sent by express airmail for an additional fee of PKR 3,000.00 for domestic delivery or USD 150.00 for overseas delivery. No liability will be accepted for loss in transit or late delivery.

7. Deliver your bid:

- to the address above in Para 6
- on or before the deadline: **10 December 2026, 11:00am** (Pakistan Standard Time) and;
- together with a Bid Security as described in the Bidding Document.

Technical Bids will be opened at the address above in Para-6 at **11:30am** (Pakistan Standard Time) on the same day, in the presence of Bidders' representative who choose to attend, whereas the Financial Bids shall remain sealed and unopened and shall be placed locked. The Financial Bids of only Technically Responsive and Qualified Bidders shall be opened after Technical Bid Evaluation, whereas, the Financial Bids of those Bidders whose Technical Bids are found non-responsive and unqualified shall be returned unopened before opening the Price Bids of the substantially responsive Bidders, and

Late bids shall be rejected.

8. When comparing Bids, ADB's Domestic Preference Scheme will be applied in accordance with the provisions stipulated in the Bidding Document.

DIRECTOR GENERAL (PROCUREMENT) NGC

BIDDING DOCUMENT

ADB-PTSP-II-A-2026

Procurement of Plant - Design, Manufacture, Supply, Installation, Testing & Commissioning of 500 kV Double Circuit Quad Bundle Transmissions line for:

- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)**
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)**

Volume-I

Single-Stage: Two-Envelope Bidding Procedure



National Grid Company of Pakistan (NGC)

October, 2026

BIDDING DOCUMENT

for

Procurement of Plant - Design, Manufacture, Supply, Installation, Testing & Commissioning of 500 kV Double Circuit Quad Bundle Transmissions line for:

- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)**
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)**

Volume-I

Single-Stage: Two-Envelope Bidding Procedure

Issued on: October, 2026

Invitation for Bids No.: IFB-ADB-PTSP-II-A

OCB No.: ADB-PTSP-II-A

Employer: National Grid Company of Pakistan (NGC)

Country: Pakistan

Preface

This Bidding Document for Procurement of Plant – Design, Supply, and Installation, has been prepared by the office of Director General (Transmission Engineering) of the National Grid Company of Pakistan (NGC) and is based on the Standard Bidding Document for Procurement of Plant – Design, Supply, and Installation (SBD Plant) issued by the Asian Development Bank in January 2026.

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Section 1: Instructions to Bidders

This section specifies the procedures to be followed by Bidders when preparing and submitting their Bids. Information is also provided on the submission, opening, and evaluation of bids, and award of contract.

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A. General

1. **Scope of Bid**
 - 1.1 In connection with the Invitation for Bids (IFB) indicated in the Bid Data Sheet (BDS), the Employer, as indicated in the BDS, issues this Bidding Document for the procurement of plant and services as specified in Section 6 (Employer's Requirements). The name, identification, and number of lot(s) or contract(s) of the open competitive bidding (OCB) are provided in the BDS.
 - 1.2 Throughout this Bidding Document,
 - (a) the term "in writing" means communicated in written form and delivered against receipt;
 - (b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
 - (c) "day" means calendar day.
2. **Source of Funds**
 - 2.1 The Borrower or Recipient (hereinafter called "Borrower") indicated in the BDS has applied for or received financing (hereinafter called "funds") from the Asian Development Bank (hereinafter called "ADB") toward the cost of the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.
 - 2.2 Payments by ADB will be made only at the request of the Borrower and upon approval by ADB in accordance with the terms and conditions of the Financing Agreement between the Borrower and ADB (hereinafter called "Financing Agreement"), and will be subject in all respects to the terms and conditions of that Financing Agreement. No party other than the Borrower shall derive any rights from the Financing Agreement or have any claim to the funds.
3. **Fraud and Corruption**
 - 3.1 ADB requires Borrowers (including beneficiaries of ADB-financed activity) and their personnel, as well as firms and individuals participating in an ADB-financed activity, including but not limited to, Bidders, Suppliers, and Contractors, agents, subcontractors, subconsultants, service providers, subsuppliers, manufacturers (including their respective officers, directors, employees, and personnel) under ADB-financed contracts to observe the highest standard of ethics during the procurement and execution of such contracts in accordance with ADB's Anticorruption Policy (1998, as amended from time to time). In pursuance of this policy, ADB
 - (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
 - (ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
 - (iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of

- the party to influence improperly the actions of a party;
- (iv) “collusive practice” means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;
 - (v) “abuse” means theft, waste, or improper use of assets related to ADB-related activity, either committed intentionally or through reckless disregard; and
 - (vi) “integrity violation” means any act, as defined under ADB’s Investigation and Enforcement Framework (as amended from time to time), which violates ADB’s Anticorruption Policy, including (i) to (v) above and the following: failure to disclose and manage conflict of interest, obstructive practice, violations of debarment, retaliation against whistleblowers or witnesses, and other violations of ADB’s Anticorruption Policy, including failure to adhere to the highest ethical standard.
- (b) will reject a proposal for award if it determines that the Bidder recommended for award or any of its officers, directors, employees, personnel, subconsultants, subcontractors, service providers, suppliers, or manufacturers has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;
 - (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation, including by failing to inform ADB in a timely manner at the time they knew of the integrity violations;
 - (d) will impose enforcement and disclosure actions on a firm or an individual, at any time, in accordance with ADB’s Anticorruption Policy and Investigation and Enforcement Framework, including declaring ineligible, either indefinitely or for a stated period of time, to participate in ADB-financed, administered, or -supported activities or to benefit from an ADB-financed, -administered, or-supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices, or other integrity violations; and
 - (e) will have the right to require that a provision be included in the Bidding Documents and in contracts financed, administered, or supported by ADB, requiring Bidders, suppliers, and contractors, consultants, manufacturers, service providers and other third parties engaged or involved in ADB-related activities, and their respective officers, directors, employees and personnel, to permit ADB or its representative to inspect the site and their assets, accounts and records and other documents relating to the bid submission
 - (f) and contract performance and to have them audited by auditors appointed by ADB.

3.2 All Bidders, consultants, contractors, suppliers, manufacturers, service

providers, and other third parties engaged or involved in ADB-related activities, and their respective officers, directors, employees, and personnel, are required to cooperate fully in any investigation when requested by ADB to do so. As determined on a case-by-case basis by ADB, such cooperation is set out in detail in the Investigation and Enforcement Framework.

- 3.3 All Bidders, consultants, contractors and suppliers shall require their officers, directors, employees, personnel, agents to ensure that, in its contract with its subconsultants, subcontractors, and other third parties engaged or involved in ADB-related activities, such subconsultants, subcontractors, and other third parties similarly are required to cooperate fully in any investigation when requested by ADB to do so.
- 3.4 The Employer hereby puts the Bidder on notice that the Bidder or any Joint venture partner of the Bidder (if any) may not be able to receive any payments under the Contract if the Bidder or any of its Joint venture partners, as appropriate, is, or is owned (in whole or in part) by a person or entity subject to applicable sanctions.
- 3.5 Furthermore, Bidders shall be aware of the provision stated in GCC 6 and GCC 42.2.1(c).

4. Eligible Bidders

- 4.1 A Bidder may be a natural person, private entity, or government-owned enterprise subject to ITB 4.5—or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture. In the case of a Joint Venture,
 - (a) all partners shall be jointly and severally liable; and
 - (b) the Joint Venture shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the partners of the Joint Venture during the bidding process and, in the event the Joint Venture is awarded the Contract, during contract execution.
- 4.2 A Bidder, and all partners constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed Subcontractors or Suppliers for any part of the Contract, including related services.
- 4.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if any of, including but not limited to, the following apply:
 - (a) they have controlling shareholders in common; or
 - (b) they receive or have received any direct or indirect subsidy from any of them; or
 - (c) they have the same legal representative for purposes of this bid; or
 - (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to material information about or improperly influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
 - (e) a Bidder participates in more than one bid in this bidding process, either

individually or as a partner in a Joint Venture, except for alternative offers permitted under ITB 13 of the Bidding Document. This will result in the disqualification of all Bids in which it is involved. However, subject to any finding of a conflict of interest in terms of ITB 4.3(a)–(d) above, this does not limit the participation of a Bidder as a Subcontractor in another Bid or of a firm as a subcontractor in more than one Bid; or

- (f) a Bidder, Joint Venture partner, associate, parent company, or any affiliated entity participated as a consultant in the preparation of the design or technical specifications of the plant and services that are the subject of the Bid; or
 - (g) a Bidder was affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Employer or Borrower as Project Manager for the Contract; or
 - (h) a Bidder would be providing goods, works, or nonconsulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or
 - (i) a Bidder that has a financial or familial relationship with staff of the Employer including project implementing/executing agency, or of a recipient of a part of the loan who: (i) are directly or indirectly involved in the preparation of the Bidding Document or specifications of the contract, and/or the bid evaluation process of such contract ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to ADB throughout the procurement process and execution of the contract.
- 4.4 A firm will not be eligible to participate in any procurement activities under an ADB-financed, -administered, or -supported project while under suspension or debarment by ADB pursuant to its Anticorruption Policy (see ITB 3), whether such debarment was directly imposed by ADB, or enforced by ADB pursuant to the Agreement for Mutual Enforcement of Debarment Decisions. A bid from a temporary suspended or debarred firm will be rejected and such bid may be in breach of debarment conditions, thereby subject to further ADB's investigation.
- 4.5 Government-owned enterprises in the Borrower's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not dependent agencies of the Employer.
- 4.6 A Bidder shall not be under suspension from bidding by the Employer as the result of the execution of a Bid–Securing Declaration.
- 4.7 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.
- 4.8 Bidders shall be excluded if, by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods from, or payments to a particular country, person, or entity in respect of goods or services originating in that country. Where the Borrower's country prohibits payments to a particular person or entity or for particular goods or

services by such an act of compliance, that firm shall be excluded.

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| 5. Eligible Plant, Materials, Equipment and Services | <p>5.1 The plant, materials, equipment and services to be supplied under the Contract shall have their origin in Eligible source countries as defined in ITB 4.2 and all expenditures under the Contract will be limited to such plant, materials, equipment and services. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment, and services.</p> <p>5.2 For purposes of ITB 5.1 above, "origin" means the place where the plant, materials, equipment or component parts thereof are mined, grown, produced, or manufactured, and from which the services are provided. Plant, materials and equipment components are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product result that differs substantially in its basic characteristics or in purpose or utility from its components.</p> |
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B. Contents of Bidding Document

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| 6. Sections of Bidding Document | <p>6.1 The Bidding Document consists of Parts I, II, and III, which include all the sections indicated below, and should be read in conjunction with any addenda issued in accordance with ITB 8.</p> <p>PART I Bidding Procedures</p> <ul style="list-style-type: none"> • Section 1 - Instructions to Bidders (ITB) • Section 2 - Bid Data Sheet (BDS) • Section 3 - Evaluation and Qualification Criteria (EQC) • Section 4 - Bidding Forms (BDF) • Section 5 - Eligible Countries (ELC) <p>PART II Requirements</p> <ul style="list-style-type: none"> • Section 6 - Employer's Requirements (ERQ) <p>PART III Conditions of Contract and Contract Forms</p> <ul style="list-style-type: none"> • Section 7 - General Conditions of Contract (GCC) • Section 8 - Special Conditions of Contract (SCC) including; <ul style="list-style-type: none"> Part A – Environmental, Health and Safety (EHS), Part B – Performance Damages (optional), and Part C – Bonuses (optional) • Section 9 - Contract Forms (COF) <p>6.2 The IFB issued by the Employer is not part of the Bidding Document.</p> <p>6.3 The Employer is not responsible for the completeness of the Bidding Document and its addenda, if they were not obtained directly from the source stated by the Employer in the IFB.</p> <p>6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the Bid.</p> |
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| 7. Clarification of Bidding Document, Site Visit, Pre-Bid Meeting | <p>7.1 A prospective Bidder requiring any clarification on the Bidding Document shall contact the Employer in writing at the Employer's address indicated in the BDS or raise inquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received no later than 21 days prior to the deadline for submission of bids. The Employer's response shall be in writing with copies to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 24.2.</p> <p>7.2 The Bidder 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 Bid and entering into a contract for the design and provision of plant and services. The cost of visiting the site shall be at the Bidder's own expense.</p> <p>7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, 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.</p> <p>7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.</p> <p>7.5 The Bidder is requested to submit any questions in writing, to reach the Employer not later than 1 week before the meeting.</p> <p>7.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting.</p> <p>7.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.</p> |
| 8. Amendment of Bidding Document | <p>8.1 At any time prior to the deadline for submission of Bids, the Employer may amend the Bidding Document by issuing addenda.</p> <p>8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3.</p> <p>8.3 To give prospective Bidders reasonable time in which to take an addendum</p> |

into account in preparing their Bids, the Employer may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 24.2.

C. Preparation of Bids

- 9. Cost of Bidding** 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- 10. Language of Bid** 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.
- 11. Documents Comprising the Bid** 11.1 The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Bid containing the documents listed in ITB 11.2 and the other the Price Bid containing the documents listed in ITB 11.3, both envelopes enclosed together in an outer single envelope.
- 11.2 The Technical Bid shall comprise the following:
- (a) Letter of Technical Bid;
 - (b) Bid Security or Bid-Securing Declaration, in accordance with ITB 21;
 - (c) alternative Bids, if permissible, in accordance with ITB 13;
 - (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 22.2;
 - (e) documentary evidence in accordance with ITB 14.1, that the plant, materials, equipment and services offered by the Bidder in its Bid or in any alternative Bid, if permitted, are eligible;
 - (f) documentary evidence in accordance with ITB 15, the Bidder's eligibility and qualifications to perform the contract if its Bid is accepted;
 - (g) Technical Proposal in accordance with ITB 17.
 - (h) documentary evidence in accordance with ITB 16, that the plant and services offered by the Bidder conform to the Bidding Document;
 - (i) list of subcontractors, in accordance with ITB 17.2; and
 - (j) any other document required in the BDS.
- 11.3 The Price Bid shall comprise the following:
- (a) Letter of Price Bid;
 - (b) completed schedules as required, including Price Schedules, in accordance with ITB 12 and ITB 18;
 - (c) alternative Price bids, at Bidder's option and if permissible, in accordance with ITB 13; and

(d) any other document required in the BDS.

11.4 In addition to the requirements under ITB 11.1, Bids submitted by a Joint Venture shall include a copy of the Joint Venture Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all partners and submitted with the Bid, together with a copy of the proposed agreement.

12. Letter of Bid and Schedules

12.1 The Letters of Technical Bid and Price Bid and Schedules, including the appropriate Price Schedules, using the relevant forms furnished in Section 4 (Bidding Forms). The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested and as required in the BDS.

13. Alternative Bids

13.1 Unless otherwise indicated in the BDS, alternative Bids shall not be considered. If permitted, the evaluation methods will be as specified in Section 3 (Evaluation and Qualification Criteria).

13.2 Unless otherwise indicated in the BDS, alternative times for completion shall not be considered. If permitted, the evaluation method will be as specified in Section 3 (Evaluation and Qualification Criteria).

13.3 Unless otherwise indicated in the BDS, alternative technical solutions shall not be considered. If permitted to submit alternative technical solutions for specified parts of the plant and services, such parts will be identified in the BDS and described in Section 6 (Employer's Requirements). The method for their evaluation will be stipulated in Section 3 (Evaluation and Qualification Criteria).

13.4 Except as provided under ITB 13.3 above, Bidders wishing to offer technical alternatives to the Employer's requirements as described in the Bidding Document must also provide (i) a price at which they are prepared to offer a plant meeting the Employer's requirements; and (ii) all information necessary for a complete evaluation of the alternatives by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed installation methodology and other relevant details. Only the technical alternatives, if any, of the Most Advantageous Bidder conforming to the basic technical requirements shall be considered by the Employer.

13.5 When Bidders are invited in the BDS to submit alternative technical solutions for specified parts of the facilities, such parts shall be described in Section 6 (Employer's Requirements). Technical alternatives that comply with the performance and technical criteria specified for the plant and services shall be considered by the Employer on their own merits, pursuant to ITB 38.

14. Documents Establishing the Eligibility of Plant and Services

14.1 To establish the eligibility of the plant and services in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section 4 (Bidding Forms).

15. Documents Establishing the Qualifications

15.1 To establish its qualifications to perform the Contract in accordance with Section 3 (Evaluation and Qualification Criteria), the Bidder shall provide the information requested in the corresponding information sheets included in Section 4 (Bidding Forms).

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| of the Bidder | 15.2 Domestic Bidders, individually or in Joint Ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 37. |
| 16. Documents Establishing Conformity of the Plant and Services | <p>16.1 The documentary evidence of the conformity of the plant and services to the Bidding Document may be in the form of literature, drawings, and data, and shall furnish</p> <ul style="list-style-type: none"> (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, or special tools necessary for the proper and continuing functioning of the plant for the period stated in the BDS, following completion of plant and services in accordance with provisions of the contract; and (c) a commentary on the Employer's Specifications and adequate evidence demonstrating the substantial responsiveness of the plant and services to those specifications. Bidders shall note that standards for workmanship, materials, and equipment designated by the Employer in the Bidding Document are intended to be descriptive (establishing standards of quality and performance) only and not restrictive. The Bidder may substitute alternative standards, brand names, and/or catalog numbers in its Bid, provided that it demonstrates to the Employer's satisfaction that the substitutions are substantially equivalent or superior to the standards designated in the Specifications. |
| 17. Technical Proposal, Subcontractors | <p>17.1 The Bidder shall furnish a Technical Proposal, including a statement of work methods, equipment, personnel, schedule, as well as the Bidder's Environmental, Health, and Safety management plan (Bidder's EHSMP) , and other relevant Bidder's Environmental, Health, and Safety (EHS) management documents required in the BDS, commensurate with the proposed scope of works, and any other information as stipulated in Section 4 (Bidding Forms), in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the work requirements and the completion time.</p> <p>17.2 For major items of plant and services as listed by the Employer in Criterion 6 of Section 3 (Evaluation and Qualification Criteria), which the Bidder intends to purchase or subcontract, the Bidder shall give details of the name and nationality of the proposed Subcontractors, including Manufacturers, for each of those items. In addition, the Bidder shall include in its Bid information establishing compliance with the requirements specified by the Employer for these items. Bidders are free to list more than one Subcontractor against each item of the plant and services. Quoted rates and prices will be deemed to apply to whichever Subcontractor is appointed, and no adjustment of the rates and prices will be permitted.</p> <p>17.3 The Bidder shall be responsible for ensuring that any Subcontractor proposed complies with the requirements of ITB 4, and that any plant or services to be provided by the Subcontractor comply with the requirements of ITB 5 and ITB 15.1.</p> |
| 18. Bid Prices and Discounts | 18.1 Unless otherwise specified in the BDS and/or Section 6 (Employer's Requirements), Bidders shall quote for the entire plant and services on a "single responsibility" basis such that the total Bid price covers all the |

Contractor's obligations mentioned in or to be reasonably inferred from the Bidding 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 Bidding 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 Bidding Document, all in accordance with the requirements of the General Conditions. Items against which no price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed to be covered by the prices for other items.

- 18.2 Bidders are required to quote the price for all commercial, contractual, and technical obligations outlined in the Bidding Document. The prices for all items in the Price Schedules shall be expressed in positive values. If the prices are expressed in negative values, the bid will be rejected.
- 18.3 Bidders shall give a breakdown of the prices in the manner and detail called for in the Price Schedules included in Section 4 (Bidding Forms). Where no different Price Schedules are included in the Bidding Document, Bidders shall present their prices in the following manner: Separate numbered Schedules included in Section 4 (Bidding Forms) shall be used for each of the following elements. The total amount from each Schedule (Nos. 1 to 4) shall be summarized in a Grand Summary (Schedule No. 5), giving the total bid price(s) to be entered in the Letter of Price Bid. Absence of the total bid price in the Letter of Price Bid may result in the rejection of the Bid.

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

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

Schedule No. 3: Design Services

Schedule No. 4: Installation and Other Services

Schedule No. 5: Grand Summary (Schedule Nos. 1 to 4)

Schedule No. 6: Recommended Spare Parts

Bidders shall note that the plant and mandatory spare parts 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 Schedule No. 4, Installation and Other Services.

- 18.4 In the Schedules, Bidders shall give the required details and a breakdown of their prices as follows:
- (a) Plant to be Supplied from Abroad (Schedule No. 1):
- (i) the price of the plant shall be quoted carriage and insurance paid (CIP)-named place of destination basis specified in the BDS;
 - (ii) all customs duties and other taxes paid or payable in the Employer's country on the plant if the contract is awarded to the Bidder; and

- (iii) the total price for the plant.
 - (b) Plant Supplied from Within the Employer's Country (Schedule No. 2):
 - (i) the price of the plant shall be quoted on an EXW Incoterm basis (ex works, ex factory, ex warehouse, ex showroom, as applicable), including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of plant quoted ex works or ex factory, or on the previously imported plant of foreign origin quoted ex warehouse, ex showroom;
 - (ii) sales tax and other taxes payable in the Employer's country on the plant if the contract is awarded to the Bidder, and
 - (iii) the total price for the plant.
 - (c) Design Services (Schedule No. 3). Rates or prices shall include all taxes, duties, levies, and charges payable in the Employer's country as of 28 days prior to the deadline for submission of Bids.
 - (d) Installation and Other Services (Schedule No. 4) shall be quoted separately and shall include rates or prices for local transportation, 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 Bidding 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 28 days prior to the deadline for submission of bids.
 - (e) Recommended spare parts (Schedule No. 6) shall be quoted separately as specified in either subparagraph (a) or (b) above in accordance with the origin of the spare parts.
- 18.5 The current edition of Incoterms, published by the International Chamber of Commerce shall govern.
- 18.6 The prices shall be either fixed or adjustable as specified in the BDS.
- (a) In the case of Fixed Price, prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account. A Bid submitted with an adjustable price quotation will be treated as nonresponsive and rejected.
 - (b) In the case of Adjustable Price, prices quoted by the Bidder shall be subject to adjustment during the 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 Bid submitted with a fixed price quotation will be treated as nonresponsive and be rejected. The Bidder shall furnish the indexes (e.g., for labor and materials), their weightings and source in the Tables of Adjustment Data included in Section 4 (Bidding Forms). The Employer may require the Bidder to justify its proposed indexes and weightings. Any bid that omits indexes and weightings shall be subject to clarification with the Bidder.
- 18.7 If so indicated in BDS 1.1, Bids are being invited for individual lots (contracts) or for any combination of lots (packages). Bidders wishing to offer any price

reduction (discount) for the award of more than one contract shall specify in their Letter of Price Bid 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.

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| 19. Currencies of Bid and Payment | <p>19.1 The currency(ies) of the bid shall be, as specified in the BDS.</p> <p>19.2 Bidders may be required by the Employer to justify, to the Employer's satisfaction, their local and foreign currency requirements.</p> |
| 20. Period of Validity of Bids | <p>20.1 Bids shall remain valid for the bid validity period specified in the BDS. The bid validity period starts from the date fixed for the bid submission deadline date prescribed by the Employer in accordance with ITB 24.1. A bid valid for a shorter period shall be rejected by the Employer as nonresponsive.</p> <p>20.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 21, it shall also be extended 28 days beyond the deadline of the extended bid validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its Bid.</p> |
| 21. Bid Security/ Bid Securing Declaration | <p>21.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its Bid, in original form, either a Bid-Securing Declaration or a bid security as specified in the BDS. In the case of a bid security, the amount and currency shall be as specified in the BDS.</p> <p>21.2 If a Bid-Securing Declaration is required pursuant to ITB 21.1, it shall use the form included in Section 4 (Bidding Forms). The Employer will declare a Bidder ineligible to be awarded a Contract for a specified period of time, as indicated in the BDS, if a Bid-Securing Declaration is executed.</p> <p>21.3 If a bid security is specified pursuant to ITB 21.1, bid security shall be, at the Bidder's option, in any of the following forms:</p> <ul style="list-style-type: none"> (a) an unconditional bank guarantee (hard copy of the bank guarantee or in the form of SWIFT message MT760), or (b) an irrevocable letter of credit, or (c) a cashier's or certified check, <p>all from a reputable source from an eligible country as described in Section 5 (Eligible Countries). In the case of a bank guarantee, the bid security shall be submitted using either the Bid Security Form included in Section 4 (Bidding Forms) or another form acceptable to the Employer. The form must include the complete name of the Bidder. The bid security shall be valid for 28 days beyond the original validity period of the Bid, or beyond any period of extension if requested under ITB 20.2.</p> <p>21.4 Unless otherwise specified in the BDS, any Bid not accompanied by a substantially compliant bid security or Bid-Securing Declaration, if one is required in accordance with ITB 21.1, shall be rejected by the Employer as nonresponsive.</p> |

- 21.5 If a bid security is specified pursuant to ITB 21.1, the bid security of unsuccessful Bidders shall be returned promptly upon the successful Bidder's furnishing of the Performance Security pursuant to ITB 49.
- 21.6 If a bid security is specified pursuant to ITB 21.1, the bid security of the successful Bidder shall be returned promptly once the successful Bidder has signed the Contract and furnished the required Performance Security.
- 21.7 The bid security may be forfeited or the Bid-Securing Declaration executed, if
- (a) notwithstanding ITB 26.3, a Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Letter of Bid, except as provided in ITB 20.2, or
 - (b) the successful Bidder fails to
 - (i) sign the Contract in accordance with ITB 48,
 - (ii) furnish a Performance Security in accordance with ITB 49, or
 - (iii) accept the arithmetical corrections of its Bid in accordance with ITB 35.
 - (iv) furnish a domestic preference security if so required.
- 21.8 If the bid security is required as per ITB 21.1, the bid security of a Joint Venture shall be in the name of the Joint Venture that submits the Bid. If the Joint Venture has not been legally constituted at the time of bidding, the bid security shall be in the name of any or all of the Joint Venture partners. If the Bid-Securing Declaration is required as per ITB 21.1, the Bid-Securing Declaration of a Joint Venture shall be in the name of the Joint Venture that submits the Bid. If the Joint Venture has not been legally constituted at the time of bidding, the Bid-Securing Declaration shall be in the names of all future partners as named in the letter of intent referred to in ITB 4.1.

22. Format and Signing of Bid

- 22.1 The Bidder shall prepare one original set of the documents comprising the Technical Bid and one original set of the Price Bid as described in ITB 11 and clearly mark it "ORIGINAL-TECHNICAL BID" and "ORIGINAL-PRICE BID." Alternative Bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE." In addition, the Bidder shall submit copies of the Technical and Price Bid, in the number specified in the BDS and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.
- 22.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. If a Bidder submits a deficient authorization, the Bid shall not be rejected in the first instance. The Employer shall request the Bidder to submit an acceptable authorization within the number of days as specified in the BDS. Failure to provide an acceptable authorization within the period stated in the Employer's request shall cause the rejection of the Bid. If either the Letter of Technical Bid or Price Bid or Bid-Securing Declaration (if applicable) is not signed, the Bid shall be rejected.
- 22.3 A Bid submitted by a Joint Venture shall be signed so as to be legally binding on all partners.

- 22.4 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

D. Submission and Opening of Bids

- 23. Submission, Sealing, and Marking of Bids**
- 23.1 Bidders shall submit their Bids as specified in the BDS. Procedures for submission, sealing, and marking are as follows:
- (a) Bidders submitting Bids by mail or by hand shall enclose the original of the Technical Bid, the original of the Price Bid, and each copy of the Technical Bid and each copy of the Price Bid, including alternative Bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL-TECHNICAL BID", "ORIGINAL-PRICE BID", and "COPY NO. ...-TECHNICAL BID" and "COPY NO. ... - PRICE BID." These envelopes, the first containing the originals and the others containing copies shall then be enclosed in one single envelope per set. The rest of the procedure shall be in accordance with ITB 23.2 and ITB 23.3.
 - (b) Bidders submitting Bids electronically shall follow the electronic bid submission procedures specified in the BDS.
- 23.2 The inner and outer envelopes shall
- (a) bear the name and address of the Bidder,
 - (b) be addressed to the Employer in accordance with ITB 24.1,
 - (c) bear the specific identification of this bidding process indicated in the BDS 1.1, and
 - (d) bear a warning not to open before the time and date for bid opening.
- 23.3 The outer envelopes and the inner envelopes containing the Technical Bid shall bear a warning not to open before the time and date for the opening of Technical Bid, in accordance with ITB 26.1.
- 23.4 The inner envelopes containing the Price Bid shall bear a warning not to open until advised by the Employer in accordance with ITB 27.7.
- 23.5 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.
- 24. Deadline for Submission of Bids**
- 24.1 Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS.
- 24.2 The Employer may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- 25. Late Bids**
- 25.1 The Employer shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB 24. Any Bid received by the

Employer after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

26. Withdrawal, Substitution, and Modification of Bids

- 26.1 A Bidder may withdraw, substitute, or modify its Technical Bid or Price Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 22.2 (except for withdrawal notices, which do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be
- (a) prepared and submitted in accordance with ITB 22 and ITB 23 (except for withdrawal notices, which do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION," and
 - (b) received by the Employer no later than the deadline prescribed for submission of Bids, in accordance with ITB 24.
- 26.2 Bids requested to be withdrawn in accordance with ITB 26.1 shall be returned unopened to the Bidders.
- 26.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid or any extension thereof.

27. Bid Opening

- 27.1 The Employer shall open the Technical Bids in public at the address, on the date, and time specified in the BDS in the presence of Bidders' designated representatives and anyone who choose to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 23.1, shall be as specified in the BDS. The Price Bids will remain unopened and will be held in custody of the Employer until the specified time of their opening. If the Technical Bid and the Price Bid are submitted together in one envelope, the Employer may reject the entire Bid. Alternatively, the Price Bid may be immediately resealed for later evaluation.
- 27.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening.
- 27.3 Second, outer envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Bid being substituted. The inner envelopes containing the substituted Bid shall not be opened, but returned to the Bidder. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bid will remain unopened in accordance with ITB 27.1. No bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening.
- 27.4 Next, outer envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Bid. No Technical Bid and/or Price Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out and recorded at the opening of technical bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price

Bids, both Original as well as Modification, will remain unopened in accordance with ITB 27.1.

- 27.5 All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded:

- (a) the name of the Bidder;
- (b) whether there is a modification or substitution;
- (c) the presence of a bid security or Bid-Securing Declaration, if required; and
- (d) any other details as the Employer may consider appropriate.

Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Technical Bid are to be initialed by at least three representatives of the Employer attending bid opening. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB 24.1.

- 27.6 The Employer shall prepare a record of the technical bid opening, which shall include, as a minimum, the name of the Bidder and whether there is a withdrawal, substitution, or modification; alternative bids; and the presence or absence of a bid security or Bid-Securing Declaration, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted Bids on time, and posted online when electronic bidding is permitted.
- 27.7 At the end of the evaluation of the Technical Bids, the Employer will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Employer. Bidders shall be given reasonable notice of the opening of Price Bids.
- 27.8 The Employer will notify in writing Bidders who have been rejected for submitting nonresponsive Technical Bids and return their Price Bids unopened together with their bid securities, before opening the Price Bids of the substantially responsive Bidders.
- 27.9 The Employer shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids, and who passed the minimum MPC threshold, if applicable, in the presence of Bidders' representatives who choose to attend at the address, on the date, and time specified by the Employer. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.
- 27.10 All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded:
- (a) the name of the Bidder;
 - (b) whether there is a modification or substitution;
 - (c) the Bid Prices, including any discounts and alternative offers; and
 - (d) any other details as the Employer may consider appropriate.

Only Price Bids discounts, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Price Bid and Bill of Quantities are to be initialed by at least three representatives of the Employer attending bid opening. No Bid shall be rejected at the opening of Price Bids.

- 27.11 The Employer shall prepare a record of the opening of Price Bids that shall include, as a minimum, the name of the Bidder, the Bid Price (per lot if applicable), any discounts, and alternative offers. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted Bids on time, and posted online when electronic bidding is permitted.

E. Evaluation and Comparison of Bids

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| 28. Confidentiality | <p>28.1 Information relating to the examination, evaluation, comparison and post-qualification of Bids and recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with such process until the publication of Contract award.</p> <p>28.2 Any attempt by a Bidder to influence the Employer in the evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.</p> <p>28.3 Notwithstanding ITB 28.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it should do so in writing.</p> |
| 29. Clarification of Bids | <p>29.1 To assist in the examination, evaluation, and comparison of the Technical and Price Bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB 35.</p> <p>29.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.</p> |
| 30. Qualification of the Bidder | <p>30.1 The Employer shall determine to its satisfaction whether a Bidder meets the qualifying criteria specified in Section 3 (Evaluation and Qualification Criteria).</p> <p>30.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 15.1. Unless permitted in the BDS, the determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities, or affiliates.</p> <p>30.3 An affirmative determination shall be a prerequisite for proceeding the next step of the evaluation process under ITB 32. The Employer reserves the right to reject the bid of any Bidder found to be in circumstances described in ITB 3.1. A negative determination shall result in disqualification of the Bid.</p> |

- 31. Deviations, Reservations, and Omissions**
- 31.1 During the evaluation of Bids, the following definitions apply:
- (a) “Deviation” is a departure from the requirements specified in the Bidding Document;
 - (b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
 - (c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Document.
- 32. Determination of Responsiveness**
- 32.1 The Employer shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB 11.2 have been provided, and to determine the completeness of each document submitted.
- 32.2 The Employer shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected.
- (a) Letter of Technical Bid;
 - (b) written confirmation of authorization to commit the Bidder;
 - (c) Bid Security or Bid-Securing Declaration, if applicable; and
 - (d) Technical Proposal in accordance with ITB 16.
- 32.3 The Employer’s determination of a Bid’s responsiveness is to be based on the contents of the Bid itself, as defined in ITB 11.
- 32.4 A substantially responsive Technical Bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,
- (a) if accepted, would
 - (i) affect in any substantial way the scope, quality, or performance of the plant and services specified in the Contract; or
 - (ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer’s rights, or the Bidder’s obligations under the proposed Contract; or
 - (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.
- 32.5 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 17, Technical Proposal, in particular, to confirm that all requirements of Section 6 (Employer’s Requirements) have been met without any material deviation, reservation, or omission.
- 32.6 If a Bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.
- 33. Nonmaterial Nonconformities**
- 33.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid that do not constitute a material deviation,

reservation, or omission.

- 33.2 Provided that a Technical Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Technical Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
- 33.3 Provided that a Technical Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or nonconforming item or component. The adjustment shall be made using the method indicated in Section 3 (Evaluation and Qualification Criteria).
- 34. Technical Scoring** 34.1 Provided that a Technical Bid is substantially responsive in accordance with ITB 32, the Employer will proceed with the technical scoring of the Bids. The scores to be given to technical factors and sub-factors are specified in Section 3 (Evaluation and Qualification Criteria).
- 35. Correction of Arithmetical Errors** 35.1 During the evaluation of Price Bids, the Employer shall correct arithmetical errors on the following basis:
- (a) where there are errors between the total of the amounts given under the column for the price breakdown and the amount given under the Total Price, the amounts given under the column for the price breakdown shall prevail and the Total Price will be corrected accordingly;
 - (b) where there are errors between the total of the amounts of Schedule Nos. 1 to 4 and the amount given in Schedule No. 5 (Grand Summary), the total of the amounts of Schedule Nos. 1 to 4 shall prevail and the Schedule No. 5 (Grand Summary) will be corrected accordingly;
 - (c) if there is a discrepancy between the grand total price given in Schedule No. 5 (Grand Summary) and the bid amount in item (c) of the Letter of Bid, the grand total price given in Schedule No. 5 (Grand Summary) will prevail and the bid amount in item (c) of the Letter of Bid will be corrected; and
 - (d) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetical error, in which case the amount in figures shall prevail subject to (a), (b), and (c) above.
- 35.2 If the Bidder that submitted the Most Advantageous Bid does not accept the correction of errors, its Bid shall be disqualified and its bid security may be forfeited, or its Bid-Securing Declaration executed.
- 36. Conversion to Single Currency** 36.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency as specified in the BDS.
- 37. Domestic Preference** 37.1 Unless otherwise specified in the BDS, domestic preference shall not apply.

38. Financial Evaluation

38.1 The Employer shall use the criteria and methodologies indicated in this clause. No other evaluation criteria or methodologies shall be permitted.

38.2 Provided that a Bid is substantially responsive with the technical evaluation in accordance with Section 3 (Evaluation and Qualification Criteria), the Employer will proceed with the detailed evaluation of financial aspects. The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

To evaluate a Bid, the Employer shall consider the following:

- (a) the bid price, excluding provisional sums and the provision, if any, for contingencies in the Price Schedules, but including Daywork items, where priced competitively;
- (b) price adjustment for correction of arithmetical errors in accordance with ITB 35.1;
- (c) price adjustment due to discounts offered in accordance with ITB 18.7;
- (d) price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 33.3;
- (e) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 36;
- (f) assessment whether the bid is abnormally low in accordance with ITB 40; and
- (g) the evaluation factors indicated in Section 3 (Evaluation and Qualification Criteria).

38.3 The Employer's evaluation of a Bid will exclude and not take into account,

- (a) in the case of Plant and Mandatory Spare Parts (Schedule No. 1) supplied from abroad, all taxes and duties, applicable in the Employer's country and payable on the Plant and Mandatory Spare Parts if the Contract is awarded to the Bidder; and
- (b) in the case of Plant and Mandatory Spare Parts (Schedule No. 2) supplied from within the Employer's country, sales and other taxes, applicable in the Employer's country and payable on the Plant and Mandatory Spare Parts if the Contract is awarded to the Bidder.

38.4 If price adjustment is allowed in accordance with ITB 18.6, the estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.

38.5 If this Bidding Document allows Bidders to quote separate prices for different lots (contracts), and the award to a single Bidder of multiple lots (contracts), the methodology to determine the Most Advantageous Contract combinations, including any discounts offered in the Letter of Bid, is specified in Section 3 (Evaluation and Qualification Criteria).

38.6 After the detailed financial evaluation, the Employer will determine the financial score of the Bids using the formula and methodology specified in Section 3 (Evaluation and Qualification Criteria).

39. Combined Technical and Financial Scores

- 39.1 The Employer will proceed with the evaluation for each substantially responsive bid by combining the technical and financial scores using the weights specified in the BDS and as per the formula specified in Section 3 (Evaluation and Qualification Criteria). The Bid with the highest combined technical and financial score will be determined as the Most Advantageous Bid.
- 39.2 For the Most Advantageous bid, the capabilities of the manufacturers and subcontractors proposed in its Bid for the major items of plant and services will also be evaluated for acceptability in accordance with Section 3 (Evaluation and Qualification Criteria). Their participation should be confirmed with a letter of intent between the parties, as needed. Should a manufacturer or subcontractor be determined to be unacceptable, the Bid will not be rejected, but the Bidder will be required to propose, without changing its bid price, an acceptable substitute manufacturer or subcontractor meeting the minimum technical specifications stated in Section 6 (Employer's Requirements). If a Bidder does not provide an acceptable substitute manufacturer or subcontractor by the date and time set in the Employer's request for substitution of manufacturer or subcontractor, its Bid may be rejected.
- 39.3 Prior to signing the Contract, the corresponding Appendix to the Contract Agreement shall be completed, listing the approved manufacturers or subcontractors for each item concerned.

40. Abnormally Low Bids

- 40.1 An abnormally low bid is one where the bid price, in combination with other elements of the bid, appears to be so low that it raises concerns as to the capability of the Bidder to perform the contract for the offered bid price.
- 40.2 When the offered bid price of the Most Advantageous Bid appears to be abnormally low, the Employer shall undertake a three-step review process as follows:
- (a) identify abnormally low costs and unit rates by comparing them with the engineer's estimates, other substantially responsive bids, or recently awarded similar contracts;
 - (b) clarify and analyze the bidder's resource inputs and pricing, including overheads, contingencies and profit margins; and
 - (c) decide whether to accept or reject the bid.
- 40.3 With regard to ITB 40.2 (b) above, the Employer will seek a written explanation from the bidder of the reasons for the offered bid price, including a detailed analysis of costs and unit prices, by reference to the scope, proposed methodology, schedule, and allocation of risks and responsibilities. This may also include information regarding the economy of the manufacturing process; the services to be provided, or the construction method to be used; the technical solutions to be adopted; and any exceptionally favorable conditions available to the bidder for the works, equipment or services proposed.
- 40.4 After examining the explanation given and the detailed price analyses presented by the bidder, the Employer may:
- (a) accept the bid, if the evidence provided satisfactorily accounts for the low bid price and costs, in which case the bid is not considered abnormally low; or
 - (b) reject the bid if the evidence provided does not satisfactorily account for the low bid price, and make a similar determination for the next ranked bid, if

required.

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| 41. Unbalanced or Front-Loaded Bids | <p>41.1 If the Bid, which results in the Most Advantageous Bid, is seriously unbalanced or front-loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Price Schedules, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed, as well as the pricing and sources of materials, equipment, and labor.</p> <p>41.2 After evaluation of the information and detailed price analyses presented by the Bidder, the Employer may, as appropriate:</p> <ul style="list-style-type: none"> (a) accept the Bid; or (b) accept the Bid, but require that the total amount of the Performance Security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract subject to ITB 49.2; or (c) reject the Bid and make a similar determination for the next ranked bid. |
| 42. Employer's Right to Accept Any Bid and to Reject Any or All Bids | <p>42.1 The Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.</p> |

F. Award of Contract

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| 43. Award Criteria | <p>43.1 The Employer shall award the Contract to the Bidder whose offer has been determined in line with ITB 39 to ITB 41 above to be the Most Advantageous Bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be eligible and qualified to perform the Contract satisfactorily.</p> |
| 44. Notice of Intention for Award of Contract | <p>44.1 If standstill provisions apply as specified in the BDS 46, the standstill period shall be defined in the BDS to specify the duration subsequent to notification of intention for award of contract (before making the actual contract award) within which any unsuccessful bidder can challenge the proposed award.</p> <p>44.2 Prior to the expiration of the period of bid validity the Employer shall transmit the Notice of Intention for Award of Contract using the form included in Section 9 (Contract Forms) to the successful Bidder, in writing.</p> |
| 45. Invitation to Finalization of the Draft Contract Before Notification of Award 16 | <p>45.1 Prior to the expiration of the period of bid validity, the Employer shall invite the successful Bidder to finalize the provisions of the draft contract, before issuing the Notification of Award through issuance of the Letter of Acceptance.</p> <p>45.2 Invitation for finalization of the draft contract shall be done through the issuance of the corresponding form in Section 9 (Contract Forms) to the successful Bidder, in writing.</p> <p>45.3 This step must be finalized as soon as possible, but no later than 14 days.</p> |
| 46. Standstill Period | <p>46.1 The purpose of a standstill period is to allow unsuccessful bidders an opportunity to challenge an intended contract award decision before the</p> |

actual notification of award. If standstill provisions apply this shall be defined in the BDS to specify the duration subsequent to notification of intention for award of contract (before issuing the Notification of Award as per ITB 47) within which any unsuccessful bidder can challenge the proposed award.

- 46.2 If standstill period applies, unsuccessful bidders may request a debriefing request during the standstill period.
- 46.3 In the event there are any complaints during the standstill period, prior to issuance of the Notification of Award, it will be a condition that the Employer satisfactorily addresses the complaint. However, continuation of a complaint shall not be a ground for the Employer not to proceed in accordance with ITB 46.
- 46.4 If the standstill period does not apply, upon notification of award through the issuance of a Letter of Acceptance under ITB 47.1, unsuccessful Bidders may request in writing to the Employer for a debriefing seeking explanations on the grounds on which their Bids were not selected. The Employer shall promptly respond in writing and/or in a debriefing meeting to any unsuccessful Bidder who, after publication of contract award, requests a debriefing.

47. Notification of Award

- 47.1 Prior to the expiration of the period of bid validity; and upon satisfactorily addressing any complaints received during the standstill period, if applicable, and after finalization of the draft contract provisions, the Employer shall transmit the Notification of Award through the issuance of a Letter of Acceptance using the form included in Section 9 (Contract Forms) to the successful Bidder, in writing, that its Bid has been accepted, together with the finalized contract, and a request to submit the Beneficial Ownership Disclosure Form providing additional information on its beneficial ownership. The Beneficial Ownership Disclosure Form shall be submitted within 14 days of receiving this request.
- 47.2 Until a formal contract is prepared and executed by the contracting parties, the notification of award through the issuance of Letter of Acceptance shall constitute a binding Contract between the Employer and the Contractor.
- 47.3 Within 2 weeks of the award of contract, the Borrower shall publish in an English language newspaper or widely known and freely accessible website the results identifying the bid and lot or package numbers, as applicable and the following information:
 - (a) name of each Bidder who submitted a Bid;
 - (b) bid prices as read out at bid opening;
 - (c) name and evaluated prices of each bid that was evaluated;
 - (d) name of Bidders whose Bids were rejected and the reasons for their rejection; and
 - (e) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded.
 - (f) successful Bidder's Beneficial Ownership Disclosure Form.

48. Signing of Contract

- 48.1 The Employer shall send the successful Bidder the Contract Agreement together with or promptly after the issuance of Letter of Acceptance.
- 48.2 Within Unless agreed otherwise between the parties, within 28 days of receipt

of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

49. Performance Security

- 49.1 Within 28 days of the receipt of notification of award through the issuance of Letter of Acceptance from the Employer, the successful Bidder shall furnish the Performance Security in accordance with the Conditions of Contract, subject to ITB 41, using for that purpose the Performance Security Form included in Section 9 (Contract Forms), or another form acceptable to the Employer. If the bank issuing Performance Security is located outside the Employer's country, it shall be counter-guaranteed or encashable by a bank in the Employer's country.
- 49.2 Failure of the successful Bidder to submit the abovementioned performance security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security or execution of the Bid-Securing Declaration. In that event, the Employer may award the Contract to the next ranked Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.
- 49.3 The above provision shall also apply to the furnishing of a domestic preference security if so required.

50. Bidding-Related Complaints

- 50.1 The procedures for dealing with Bidding-Related Complaints arising out of this bidding process are specified in the BDS.

Section 2 - Bid Data Sheet

This section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section 1 (Instructions to Bidders).

A. General

ITB 1.1	The number of the Invitation for Bids (IFB) is: IFB-ADB-PTSP-II-A-2026
ITB 1.1	<p>The Employer is: National Grid Company of Pakistan (NGC) and Employer representative is; Director General (Procurement), NGC 8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan Postal Code: 54000 Telephone: +92-42-99202597 Fax No.: +92-42-99202173 E-mail: dg.procurement@ngc.gov.pk</p>
ITB 1.1	<p>The name of the Open Competitive Bidding (International) is: Procurement of Plant- Design, Manufacture, Supply, Installation, Testing & Commissioning of 500 kV Double Circuit Quad Bundle Transmission lines for (i) Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) and (ii) Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km).</p> <p>The identification number of the OCB is: <u>ADB-PTSP-II-A-2026</u></p> <p>The number and identification of Lots (contracts) comprising this OCB is: - Not applicable –</p>
ITB 2.1	<p>The Borrower is: Islamic Republic of Pakistan</p> <p>The name of the Project is: 59002-001 PAK: Second Power Transmission Strengthening Project (PTSP-II)</p>

B. Contents of Bidding Documents

ITB 7.1	<p>For <u>pre-bid clarification purposes</u> only, the Employer's address is: Director General (Procurement), NGC 8th Floor Shaheen Complex, Egerton Road Lahore, Pakistan Postal Code: 54000 Telephone: +92-42-99202597 Fax No.: +92-42-99202173 E-mail: dg.procurement@ngc.gov.pk</p> <p>Please note that, for Post-Bid Clarifications, all correspondence will be done directly with the evaluator, and with confidentiality.</p>
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ITB 7.4	<p>A Pre-Bid meeting shall take place as follows:</p> <p>Date: October 29, 2026</p> <p>Time: 11:00am (Pakistan Standard Time)</p> <p>Place: 8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan</p> <p>The Employer shall arrange a joint site visit of the representatives of the prospective Bidders (who wishes to do so) two days before pre bid meeting to enable the Bidders to acquaint themselves of the project site and conditions inter alia to the requirement apropos under sub-clause SI-03 “Site Conditions” of Section 6 - Employer’s Requirements of the Bidding Document. However, all the expenses in this respect will be borne by the Bidders.</p>
C. Preparation of Bids	
ITB 10.1	<p>The language of the Bid is: English</p> <p>All the supporting documents and printed literature that are not in English Language must be accompanied by duly notarized English translation of the original document.</p>
ITB 11.2 (j)	<p>The Bidder shall submit with its Technical Bid the following additional documents:</p> <ol style="list-style-type: none"> i) For a Pakistani constructor, Bidder must submit Pakistan Engineering Council (PEC) registration certificate in the category C-A. If the registration is invalid prior to contract award, the bidder shall be given reasonable time to extend such registration. For a foreign constructor participating in this bidding, if awarded the Contract, this foreign contractor must register and obtain a license from PEC in the category relevant to the limit of construction cost of the Works included in its Bid Price before the commencement of the works. ii) Type test reports of the offered equipment, as per Para 2.4 of Section 6: Employer’s Requirement. iii) Documentary evidence establishing compliance with ITB 4.3 Para (a) to (d) including, but not limited to; <ul style="list-style-type: none"> • who is/are responsible for the appointment of Management and Board of Directors (BoD) of the Bidder / each partner of the Bidder in case of JV • name and address of legal representatives for the purpose of this bid • hierarchy / relationship with the subsidiary / affiliated companies of the Bidder (if any) with in the Bidder’s country / worldwide, directly or through common third parties iv) The Employer may request during evaluation the submission of ultimate legal and beneficial ownership of each Bidder with full legal name, nationality and details of controlling shareholders. v) All forms duly completed by the Bidders and submitted as part of Bid as contained in Section 4: Bidding Forms. vi) Copies of the documents / attachments listed in Forms ELI-1 and ELI-2 of Section 4 – Bidding Forms. vii) Unconditional undertaking(s) signed & stamped by the bidder and countersigned by the concerned manufacturer(s) stating that, in case of award of contract, if submitted type test reports are not according to NGC’s (formerly NTDC) Type Test Policy, he will carry out type tests as per NGC’s (formerly NTDC) Type Test Policy within the quoted Bid Price and without affecting the delivery/completion period as mentioned in the

	<p>Bidding Document as required under Sub-Clause 2.4 of Employer's Requirements-Section 6.</p> <p>viii) Undertaking as required under Note 4 of Clause SI-05 (Employer's Requirement-Section 6).</p> <p>ix) Proof of purchase (in original) of Bidding Documents from the Employer.</p> <p>x) Electronic/Soft copy of complete Technical Bid in USB/Pen Drive containing an electronic version of the Bid in PDF format scanned from the original bid. This should be enclosed in the sealed envelope containing the Original Bid.</p> <p>In case of a discrepancy, the hard copy shall prevail. The soft copy shall not be considered as a replacement of hard copy.</p>
ITB 11.3 (d)	<p>The Bidder shall submit with its Price Bid the following additional documents:</p> <p>Electronic/Soft copy of complete Financial Bid in USB/Pen Drive containing (i) an electronic version of the Bid in PDF format scanned from the original bid and (ii) filled Price Schedules in MS Excel Format. This should be enclosed in the sealed envelope containing the Original Bid.</p> <p>In case of a discrepancy, the hard copy shall prevail. The soft copy shall not be considered as a replacement of hard copy.</p>
ITB 12.1	<p>The units and rates in figures entered into the Price Schedules should be typewritten or if written by hand, must be in print form. Price Schedules not presented accordingly may be considered nonresponsive.</p>
ITB 13.1	<p>Alternative bids shall not be permitted</p>
ITB 13.2	<p>Alternative times for completion shall not be permitted.</p>
ITB 13.5	<p>Alternative technical solutions for any part of the Facilities shall not be permitted</p>
ITB 16.1 (b)	<p>NOT APPLICABLE</p>
ITB 17.1	<p>The Bidder shall submit the following additional documents in the Technical Proposal of its Bid:</p> <ul style="list-style-type: none"> • EHS policy of the bidder • Previous EHS performance record (if available) • HSE organogram / organization chart • A short method statement on how the bidder will comply with environmental, health and safety related requirements mentioned in this tender as well as mentioned in the approved environmental and social reports¹
ITB 17.2	<p>Bidders are free to list more than one Subcontractor/manufacturer but not more than three (03) against each item of the plant and equipment. In case more than three (03) Subcontractors/manufacturers are proposed by the Bidder, the Employer at its discretion shall evaluate any three (03) Subcontractors/manufacturers.</p>
ITB 18.1	<p>Bidders shall quote for the entire plant and services on a single responsibility basis.</p>
ITB 18.4 (a)	<p>(i). The Incoterm for quoting price of the plant to be supplied from abroad is:</p>

¹ <https://www.adb.org/projects/59002-001/main#project-pds>

	<p>Incoterms 2020, CIP (Ghazi Barotha – Faisalabad West S/S and Ghazi Barotha - Islamabad West G/S Site(s))</p> <p>(ii). All custom duties and other taxes payable in Pakistan on the Plant to be imported by the Contractor for incorporation in the Facilities shall not be included in the rates and prices in the Price Schedule as the same shall be reimbursed by the Employer as per actual from the Provisional Sums provided in the Price Schedule No. 5: Summary, as per Sub-Clause 14.2 of GCC.</p>
ITB 18.4 (b)	<p>(i) Notwithstanding the Incoterms for quoting price of the Plant manufactured within the Employer's Country as Ex-Works (EXW), it is mandatory upon the Bidder to quote inland transportation charges in the relevant Price Schedule as the Contract shall be awarded on the basis of Ex-Works + Transportation Cost.</p> <p>(ii) General Sales tax and all other taxes payable in Pakistan on the Plant to be supplied by the Contractor for incorporation in the Facilities shall not be included in the rates and prices in the Price Schedule as the same shall be reimbursed by the Employer as per actual from the Provisional Sums provided in the Price Schedule No. 5: Summary, as per sub-clause 14.2 of GCC.</p>
ITB 18.4 (d)	<p>Following text is added at the end of this Sub-Clause:</p> <p>The Bidder shall quote Provincial Sales Tax (PST) in a separate column given in the Schedule No. 4.</p>
ITB 18.6	<p>The prices quoted by the Bidder shall be ADJUSTABLE as per criteria stipulated in Appendix 2 (Price Adjustment) to Contract Agreement given in Section - 9 (Contract Forms)</p>
ITB 19.1	<p>The currencies of the Bid shall be as follows:</p> <p>(a) The prices shall be quoted either in the currency of the Bidder's home country, or in any fully convertible currency(ies).</p> <p>(b) A Bidder expecting to incur a portion of its expenditures in the performance of the Contract in more than one currency, and wishing to be paid accordingly, shall so indicate in the Schedule of Prices and the Letter of Bid.</p> <p>(c) If some of the contract expenditures related to Design, Installation, and Other Services are to be incurred in the Employer's country, such expenditures shall be quoted in either foreign and/or local currency, depending upon the currency in which the costs are to be incurred.</p> <p>(d) Bidders may be required by the Employer to clarify their local and foreign currency requirements, and to substantiate that the amounts included in the Price Schedules are reasonable and responsive to ITB 18.1 in which case a detailed breakdown of its foreign currency requirements shall be provided by the Bidder.</p> <p>(e) During the performance of the contract, the foreign currency portions of the outstanding balance of the Contract Price may be adjusted by agreement between the Employer and the Contractor to reflect any changes in foreign currency requirements for the contract. Any such adjustment shall be effected by comparing the amounts quoted in the bid with the amounts already used in the Facilities and the Contractor's future needs for imported items.</p>
ITB 20.1	<p>The bid validity period shall be 180 days.</p>

ITB 21.1	<p>The Bidder shall furnish a Bid Security in the amount as follows or equivalent in any other freely convertible currency at an exchange rate (composite TT&OD selling) published by the National Bank of Pakistan, prevailing 28 days prior to the deadline for submission of Bids:</p> <p>2.01 Million USD</p>
ITB 21.2	NOT APPLICABLE
ITB 21.3	<p>Bid security in the form of Swift message shall be unconditional and encashable on written request without any cavil or argument and compliant with other conditions mentioned in Section - I, ITB 21.</p> <p>The same may be in favor of:</p> <p>1: Chief Engineer (MP&M) NTDC Account No. 001000048380405 Allied Bank Limited, WAPDA House Branch, Lahore Swift code: ABPAPKKALHR.</p> <p>2: Chief Engineer (MP&M) NTDC Account No. 0005527900518901 Habib Bank Limited, WAPDA House Branch, Lahore Swift code: HABBPCKA552</p> <p>An unconditional bank guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank should be duly counter-guaranteed by a Scheduled Bank in Pakistan.</p>
ITB 21.4	<p>Subject to the succeeding sentences, any Bid not accompanied by an irrevocable and callable Bid security shall be rejected by the employer as non-responsive. If a bidder submits a Bid security that (i) deviates in form, amount (not more than 2% of the required amount of Bid security) and / or period of validity, or (ii) does not provide sufficient identification of the Bidder (including, without limitation, failure to indicate the name of the Joint Venture or, where the Joint Venture has not yet been constituted, the names of all future Joint Venture Partners), the Employer shall request the Bidder to submit a compliant Bid security within ten (10) calendar days of receiving such a request. Failure to provide a compliant bid security within the prescribed period of receiving such a request shall cause the rejection of the Bid.</p>
ITB 22.1	<p>In addition to the original Bid, the number of copies is: Three (03)</p> <p>Bidders are also required to provide an USB which includes i) an electronic version of the Bid in PDF format scanned from the Original bid, and ii) filled Price Schedules in MS Excel format.</p> <p>Non-submission of the electronic version of the Bids shall not be a reason for rejection of Bid.</p> <p>In case of discrepancy between the Original Bid and electronic copy, the original Bid shall prevail.</p>
ITB 22.2	<p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of:</p> <p>An organizational document, board resolution or its equivalent, or notarized power of attorney specifying the representative's authority to sign the Bid on behalf of, and to legally bind, the Bidder. If the Bidder is an intended or an existing Joint Venture, the power of attorney should be signed by all partners and specify the authority of the named representative of the Joint Venture to sign on behalf of, and legally bind, the intended or existing Joint Venture</p>

	<p>partner. If the Joint Venture has not been formed, also included evidence from all proposed Joint Venture partner of their intent to enter into a Joint Venture in the event of a contract award following ITB 11.4.</p> <p>The Bidder shall submit an acceptable authorization within seven (07) calendar days.</p>
D. Submission and Opening of Bids	
ITB 23.1	Bidders shall submit their Bids by mail or by hand.
ITB 23.1 (b)	Electronic bidding submission procedures shall be: <u>Not Applicable</u>
ITB 24.1	<p>For <u>bid submission purposes only</u>, the Employer's address is</p> <p>Director General (Procurement), NGC 8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan Postal Code: 54000 Telephone: +92-42-99202597 Fax No.: +92-42-99202173 E-mail: dg_procurement@ngc.gov.pk</p> <p>The deadline for bid submission is:</p> <p>Date: December 10, 2026</p> <p>Time: 11:00 am (Pakistan Standard Time)</p>
ITB 27.1	<p>The Technical bid opening shall take place at the office of</p> <p>Director General (Procurement), NGC 8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan</p> <p>Date: December 10, 2026</p> <p>Time: 11:30 am (Pakistan Standard Time)</p>
ITB 27.1	Electronic bid opening procedure shall be as follows: <u>Not Applicable</u>
ITB 27.5	The Letter of Technical Bid shall be initialed by all the members of tender opening committee attending Technical Bid opening.
ITB 27.10	The Letter of Price Bid and Price Schedules shall be initialed by all the members of tender opening committee attending the Price Bid opening.
E. Evaluation and Comparison of Bids	
ITB 30.2	The qualifications of other firms such as the Bidder's subsidiaries, parent entities, or affiliates, "shall not" be permitted.
ITB 36.1	<p>The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: Pakistani Rupees (PKR).</p> <p>The source of the exchange rate shall be: TT&OD (Telegraphic Transfer & On Demand) composite exchange rate (selling), published by the National Bank of Pakistan (NBP).</p>

	<p>In case the said exchange rates of any currency (ies) have not been published by the National Bank of Pakistan (NBP), then currency exchange rate of U.S Dollar (USD) published in the Daily Business Recorder, Pakistan, shall be used for Bid comparison purpose to convert all Bid Prices expressed in various currencies into Pakistani Rupees (PKR).</p> <p>The date for the selling exchange rate shall be the date of Technical Bid Opening.</p>
ITB 37.1	Domestic preference shall apply. The application methodology will be as specified in Section 3 (Evaluation and Qualification Criteria).
ITB 39.1	<p>The technical and financial weights to be used for the combined technical and financial scores will be as follows:</p> <p>T_{weight} = Technical weight being equal to 10.</p> <p>F_{weight} = Financial weight being equal to 90.</p> <p>The sum of technical and financial weights should be equal to 100.</p>
ITB 39.2	The text “minimum technical specifications stated in Section 6 (Employer’s Requirements)” is replaced with “minimum qualification criteria for Subcontractors in Section 3 – Evaluation and Qualification Criteria”
ITB 46.1	<p>Standstill provisions shall apply. The duration of standstill period will be fourteen (14) days from the date of notice of intention for award of contract.</p> <p>The Employer shall, at the start of the standstill period, notify in writing each bidder that submitted a bid, of its intention to award a contract to the successful Bidder at the end of standstill period. The notification using the form included in Section 9 (Contract Forms) shall include the following information:</p> <ul style="list-style-type: none"> (a) the name of each Bidder who submitted a Bid; (b) the bid prices as read out at bid opening; (c) the name and evaluated prices of each Bid that was evaluated; (d) the name of Bidders whose bids were rejected and the reasons for their rejection; (e) the name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded; and (f) a statement of the reason(s) the bid of the unsuccessful Bidder to whom the notification is addressed was unsuccessful, unless the price information under (e) of this paragraph already reveals the reason.
F. Award of Contract	
ITB 50.1	<p>The procedures for Bidding-Related Complaints are referenced in the Procurement Directive for ADB Borrowers. The Bidder should submit its complaint following these procedures, in writing, to:</p> <p>Director General (Procurement), National Grid Company of Pakistan (NGC), 8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan Postal Code: 54000 Telephone: +92-42-99202597 Fax No.: +92-42-99202173 E-mail: dg.procurement@ngc.gov.pk</p>

Section 3 - Evaluation and Qualification Criteria

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1. Qualification

1.1. Eligibility

Criteria	Compliance Requirements			Documents
Requirement	Single Entity	Joint Venture		
		All Partners Combined	Each Partner	One Partner
				Submission Requirements

1.1.1. Nationality

Nationality in accordance with ITB 4.2.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Forms ELI - 1; ELI - 2 with attachments
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1.1.2. Conflict of Interest

No conflicts of interest in accordance with ITB 4.3.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid
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1.1.3. ADB Eligibility

Not having been declared ineligible by ADB, as described in ITB 4.4.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid
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1.1.4. Government-Owned Enterprise

Bidder required to meet conditions of ITB 4.5.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Forms ELI - 1; ELI - 2 with attachments
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1.1.5. United Nations Eligibility

Not having been excluded by an act of compliance with a United Nations Security Council resolution in accordance with ITB 4.8.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid
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1.2. Historical Contract Non-Performance

1.2.1 History of Non-Performing Contracts

Criteria	Compliance Requirements			Documents
Requirement	Single Entity	Joint Venture		Submission Requirements

		All Partners Combined	Each Partner	One Partner	
Non-performance of a contract ^a did not occur as a result of contractor default since 1st October 2016 .	Must meet requirement	Must meet requirement	Must meet requirement ^b	Not applicable	Form CON-1

^a Nonperformance, as decided by the Employer, shall include all contracts where, any of the two conditions¹ below have been met:

- 1)
 - a) *the contract was terminated for cause by the employer due to the contractor's default(s) in fulfilling its obligations (including any Environmental, Health, and Safety (EHS) obligations),*
and
 - b) *the contractor did not challenge such termination and/or call of the performance security or employer's claims, including referral to the dispute resolution mechanism under the respective contract*
or
 - c) *contracts that were so challenged, but fully settled against the contractor.*

OR

- 2)
 - (a) *the performance security was called partly or wholly,*
or
 - (b) *claims were made against the contractor by the employer due to the contractor's default(s), which have led to works not being completed, i.e. taking-over certificate not having been issued;*
and
 - (c) *the contractor did not challenge the call of the performance security or employer's claims, including referral to the dispute resolution mechanism under the respective contract*
or
 - (d) *contracts that were so challenged, but fully settled against the contractor as a result of the dispute resolution mechanisms.*

In cases where challenged by the contractor, Nonperformance must be based on all information on fully settled disputes or litigation, i.e., dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

^b This requirement also applies to contracts executed by the Bidder as a Joint Venture partner.

1.2.2 Suspension Based on Execution of Bid-Securing Declaration

Criteria	Compliance Requirements		Documents
Requirement	Single Entity	Joint Venture	Submission Requirements

¹ For example, non-performance should meet condition 1 or condition 2. Condition 1 within itself should meet 1a "and" 1b or 1c; condition 2 within itself should meet 2a or 2b "and" 2c or 2d.

		All Partners Combined	Each Partner	One Partner	
Not under suspension based on execution of a Bid Securing Declaration pursuant to ITB 4.6.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid

1.2.3 Pending Litigation and Arbitration

Pending litigation and arbitration criterion shall not apply.

1.3. Financial Situation

1.3.1 Historical Financial Performance

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Submission of audited financial statements or, if not required by the law of the Bidder's country, other financial statements acceptable to the Employer, for the last three (03) years to demonstrate the current soundness of the Bidder's financial position. As a minimum, the Bidder's net worth for the last year calculated as the difference between total assets and total liabilities should be positive.	Must meet requirement	Not applicable	Must meet requirement	Not applicable	Form FIN - 1 with attachments

1.3.2 Average Annual Turnover

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Minimum average annual turnover of US\$ 129.4 million calculated as total certified payments received for contracts in progress or completed, within the last three (03) years.	Must meet requirement	Must meet requirement	Must meet 25% of the requirement	Must meet 40% of the requirement	Form FIN - 2

1.3.3 Financial Resources

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
For Single Entities: The Bidder must demonstrate that its financial resources defined in FIN - 3, less its financial obligations for its major contract commitments as defined in FIN - 4, meet or exceed the total requirement for the Subject Contract of US\$ 30.23 million.	Must meet requirement	Not applicable	Not applicable	Not applicable	Form FIN – 3 and Form FIN - 4
For Joint Ventures: (1) One partner must demonstrate that its financial resources defined in FIN - 3, less its financial obligations for its own major contract commitments as defined in FIN - 4, meet or exceed its required share of forty (40) % from the total requirement for the Subject Contract. AND	Not applicable	Not applicable	Not applicable	Must meet requirement	Form FIN – 3 and Form FIN - 4
(2) Each partner must demonstrate that its financial resources defined in FIN - 3, less its financial obligations for its own major contract commitments as defined in FIN - 4, meet or exceed its required share of twenty-five (25) % from the total requirement for the Subject Contract. AND	Not applicable	Not applicable	Must meet requirement	Not applicable	Form FIN – 3 and Form FIN - 4
(3) The joint venture must demonstrate that the combined financial resources of all partners defined in FIN - 3, less all the partners' total financial obligations for the major contract commitments as defined in FIN - 4, meet or exceed the total requirement for the Subject Contract of US\$ 30.23 million.	Not applicable	Must meet requirement	Not applicable	Not applicable	Form FIN – 3 and Form FIN - 4

1.4. Bidder's Experience

1.4.1 Contracts of Similar Size and Nature

(a) Similar Size – Must be complied with by the Bidder

Criteria	Compliance Requirements			Documents
Requirement	Single Entity	Joint Venture		Submission Requirements
		All Partners Combined	Each Partner	
Participation as a main contractor, Management contractor or Joint Venture / Consortium partner, in at least one (01) contract that has been satisfactorily and substantially completed between 1 st November 2016 and bid submission deadline where the value of the Bidder's participation ^a exceeds 100.5 million USD ^a .	Must meet requirement	Not applicable	Not applicable	Must meet requirement
				Form EXP - 1 with copies of the relevant signed contract agreement, Completion Certificates/Taking Over Certificates or Performance Certificates/ Operational Acceptance Certificates, and JV agreement (if any) of the relevant contracts showing value and nature of participation of Bidder. Notarized English translation is needed if the evidence documents are not in English. Failure to provide the required evidence documents along with the bid may cause bid rejection.

^a For contracts under which the Bidder participated as a Joint Venture/Consortium partner, only the Bidder's share shall be considered to meet this requirement.

^b If the contract value is not in the specific currency, the exchange rate to be used to calculate the value of the contract shall be the selling rate of the National Bank of Pakistan on the date of the contract signing.

Note: For contracts implemented by a Joint Venture contractor, if the Bidder comprises the same Joint Venture, the "Single Entity" requirements will apply.

(b) Similar Nature – Must be complied with by the Bidder

Criteria Requirement	Compliance Requirements				Documents
	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
<p>Participation and successful implementation, as a main contractor, Management contractor or Joint Venture / Consortium partner, in the following technical requirements, within the last ten (10) years which has been in operation for at least last two (2) years as of bid opening date.</p> <p>i. Detailed survey/Check Survey of a 380kV or higher voltage transmission line having a minimum line length of 50km.</p> <p>ii. Sub-Soil Investigation for a minimum of 500 Linear meters.</p> <p>iii. Civil Works/Construction of at least 150 conventional tower foundations for a 380kV or higher voltage transmission line.</p> <p>iv. Erection of at least 150 towers of a 380kV or higher voltage transmission line.</p> <p>v. Stringing of a 380kV or higher voltage bundled transmission line having a minimum line length of 50km.</p> <p>vi. Testing and Commissioning of a 380kV or higher voltage bundled transmission line having a minimum line length of 50km.</p>	Must meet requirement	Must meet requirement	Not applicable	Not applicable	<p>Form EXP - 1 with copies of the relevant signed contract agreement, Completion Certificates/Taking Over Certificates or Performance Certificates/ Operational Acceptance Certificates, and JV agreement (if any) of the relevant contracts showing value and nature of participation of Bidder. Notarized English translation is needed if the evidence documents are not in English. Failure to provide the required evidence documents along with the bid may cause bid rejection.</p>

Notes:

- The requirements under 1.4.1 (b) can be met under separate contracts and it is not a requirement to have completed all requirements under a single contract.
- Each technical requirement must have been completed under a “single” contract.
- The Bidder shall submit evidence that the relevant technical requirement (e.g. Interim payment certificate, approval by the Engineer, etc.) has been satisfactorily completed. It is also a mandatory requirement that the particular contract within which the technical requirement has been implemented must have been substantially and/or satisfactorily completed and relevant technical parameter/requirement has been in operation for at least last two (2) years as of bid opening date.

- iv. For contracts under which the Bidder participated as a Joint Venture partner/Consortium, only the Bidder's share shall be considered to meet this requirement.
- v. For contracts implemented by a Joint Venture contractor, if the Bidder comprises the same Joint Venture, the "Single Entity" requirements will apply.

1.4.2 Experience in Specialized Key Activities which may be met by the Bidder or Specialist Subcontractors (optional)

The requirement may be met by the Bidder, as a single entity or any one of the JV partners, or Bidder's proposed specialist subcontractor(s).

Criteria		Compliance Requirements		Documents
Requirement	Single Entity or Its Specialist Subcontractors	Joint Venture or Its Specialist Subcontractors	Submission Requirements	
The bidder or any one of the JV partners or the proposed specialist subcontractor must have at least five (05) years of experience in any type of pile foundations, of any length.	must meet requirement	must meet requirement	Form EXP-2 with copies of the relevant signed contract agreement showing nature of participation of Bidder/JV Partner or subcontractor along with the Completion Certificate(s)/Taking Over Certificate(s).	
If the bidder/JV Partner has not executed any EPC project in the past as sole entity, they have to propose an engineering firm/sub-contractor meeting with the following criteria: "The engineering firm/sub-contractor shall have designed (electrical and civil) at least one Transmission Line project in last ten (10) years of 380kV or higher voltage level and same nature which shall be in services for last (02) two years as of bid opening date."			Form EXP-2 with copies of the relevant signed contract agreement, Completion Certificates/Taking Over Certificates and Performance Certificates/ Operational Acceptance Certificates, and JV agreement (if any) of the relevant contracts showing value and nature of participation of Bidder.	
			Notarized English translation is needed if the evidence documents are not in English.	

1.5. Subcontractors

Subcontractors or Manufacturers for the following major items of plant and services must meet the following minimum qualification criteria, herein listed for a subcontractor for that item. Failure to comply with this requirement will result in rejection of the subcontractor but not the Bidder.

No.	Equipment/ Services	Minimum Criteria	Document Requirements
1.	Towers	<p><u>Manufacturing Experience Criteria</u></p> <p>i. The manufacturer must have manufacturing experience of double circuit steel lattice towers of 500kV or higher voltage rating of transmission lines.</p> <p><u>Performance Criteria</u></p> <p>Towers supplied by the manufacturer should have been in satisfactory operation for a continuous period of at least three years [at least one end user certificate to be outside country of manufacturer] or satisfactory operational experience of one year in NGC/DISCOs/ K-Electric prior to deadline for submission of Bids.</p>	<ul style="list-style-type: none"> • Form EXP-3 • Reference list • Contract agreements copies (with English translation) • Completion certificate(s)/ delivery document(s) (bill(s) of lading, inspection certificate(s) etc.) for the contract(s). • Authorization letter • ISO certificates • Technical data sheets • Drawings <p>At least one (01) satisfactory operational certificate shall be submitted with the bid from the end user from Pakistan or outside the country of origin of the offered equipment / goods. The submitted operational certificate must indicate the name of the end user/client along with its contact address, phone numbers, fax numbers, web-site and e-mail addresses. The bidder must also submit with the bid copies of contract agreements along with performance certificates duly notarized (along with translation in English if original is in different language) for these supplies.</p> <p>The manufacturer shall provide the following information with the Bid to establish its capacity/capability to execute the order.</p> <ul style="list-style-type: none"> • Details of manufacturing facility / equipment • Details of manufacturing process

No.	Equipment/ Services	Minimum Criteria	Document Submission Requirements
2.	Conductor / OPGW	<p><u>Manufacturing Experience Criteria</u></p> <p>i. The manufacturer must have manufacturing experience of similar Equipment/Goods of similar or higher rating and capacity.</p> <p>Definition for Similarity:</p> <ul style="list-style-type: none"> • <u>Conductor</u>: ACSR conductor with a minimum of 26/7 strands and a cross-sectional area of at least 468 mm². • <u>OPGW</u>: 24 fibers or above. <p><u>Performance Criteria</u></p> <p>The above Equipment/Goods supplied by the manufacturer should have been in satisfactory operation for a continuous period of at least three years [at least one end user certificate to be outside country of manufacturer] or satisfactory operational experience of one year in NGC/DISCOs/ K-Electric prior to deadline for submission of Bids.</p>	<ul style="list-style-type: none"> • Manufacturing Capacity • Form EXP-3 • Reference list • Contract agreements copies (with English translation) • Completion certificate(s)/ delivery document(s) (bill(s) of lading, inspection certificate(s) etc.) for the contract(s). • Authorization letter • ISO certificates • Technical data sheets • Drawings <p>At least one (01) satisfactory operational certificate shall be submitted with the bid from the end user from Pakistan or outside the country of origin of the offered equipment / goods. The submitted operational certificate must indicate the name of the end user/client along with its contact address, phone numbers, fax numbers, web-site and e-mail addresses. The bidder must also submit with the bid copies of contract agreements along with performance certificates duly notarized (along with translation in English if original is in different language) for these supplies.</p> <p>The manufacturer shall provide the following information with the Bid to establish its capacity/capability to execute the order.</p> <ul style="list-style-type: none"> • Details of manufacturing facility / equipment • Details of manufacturing process • Manufacturing Capacity

No.	Equipment/ Services	Minimum Criteria	Document Submission Requirements
3.	Insulator Hardware Assemblies for Conductor / Hardware for OPGW / Accessories and Dampers for Conductor & OPGW	<p><u>Manufacturing Experience Criteria</u></p> <p>i. The manufacturer must have manufacturing experience of similar Equipment/Goods with similar or higher rating in capacity.</p> <p>ii. The bidder or its proposed manufacturer / design institute for design of insulator hardware strings must have design experience of similar Equipment / Goods for transmission lines using electric field modeling.</p> <p>Definition for Similarity:</p> <ul style="list-style-type: none"> • Insulators M&E rating, glass/porcelain, clevis & tongue / ball & socket coupling • Hardware and dampers 380V or above and Bundled Configuration • Accessories 380kV or above <p><u>Performance Criteria</u></p> <p>The above Equipment/Goods supplied by the manufacturer should have been in satisfactory operation for a continuous period of at least three years [at least one end user certificate to be outside country of manufacturer] or satisfactory operational experience of one year in NGC/DISCOs/ K-Electric prior to deadline for submission of Bids.</p>	<ul style="list-style-type: none"> • Form EXP-3 • Reference list • Contract agreements copies (with English translation) • Completion certificate(s)/ delivery document(s) (bill(s) of lading, inspection certificate(s) etc.) for the contract(s). • Authorization letter • ISO certificates • Technical data sheets • Drawings <p>At least one (01) satisfactory operational certificate shall be submitted with the bid from the end user from Pakistan or outside the country of origin of the offered equipment / goods. The submitted operational certificates must indicate the name of the end user/client along with its contact address, phone numbers, fax numbers, web-site and e-mail addresses. The bidder must also submit with the bid copies of contract agreements along with performance certificates duly notarized (along with translation in English if original is in different language) for these supplies. The manufacturer shall provide details of manufacturing equipment and manufacturing process.</p> <p>The Bidder shall submit with the bid, copies (with duly notarized English translation) of the Electric field modelling reports of three (03) previously designed strings with supporting documents along with valid contact information (i.e. email,</p>

No.	Equipment/ Services	Minimum Criteria	Document Submission Requirements
			<p>phone, fax no.) of the end users of the material.</p> <p>The manufacturer shall provide the following information with the Bid to establish its capacity/capability to execute the order.</p> <ul style="list-style-type: none"> • Details of manufacturing facility / equipment • Details of manufacturing process • Manufacturing Capacity
4.	RTV Silicone Rubber Coating manufacturer and Coating Applicator	<p><u>Manufacturing Experience Criteria</u></p> <p>i. The manufacturer must have experience of manufacturing and application of RTV Silicone Rubber Coating on porcelain or glass insulators for transmission lines of 500kV or higher.</p> <p><u>Performance Criteria</u></p> <p>The above Equipment/Goods supplied by the manufacturer should have been in satisfactory operation for a continuous period of at least three years [at least one end user certificate to be outside country of manufacturer] or satisfactory operational experience of one year in NGC/DISCOs/ K-Electric prior to deadline for submission of Bids.</p>	<ul style="list-style-type: none"> • Form EXP-3 • Reference list • Contract agreements copies (with English translation) • Completion certificate(s)/ delivery document(s) (bill(s) of lading, inspection certificate(s) etc.) for the contract(s). • Authorization letter • ISO certificates • Technical data sheets <p>At least one (01) satisfactory operational certificate shall be submitted with the bid from the end user from Pakistan or outside the country of origin of the offered equipment / goods. The submitted operational certificates must indicate the name of the end user/client along with its contact address, phone numbers, fax numbers, web-site and e-mail addresses. The bidder must also submit with the bid copies of contract agreements along with performance certificates duly notarized (along with translation in English if original is in different language) for these supplies.</p>

No.	Equipment/ Services	Minimum Criteria	Document Submission Requirements
			<p>The manufacturer shall provide the following information with the Bid to establish its capacity/capability to execute the order.</p> <ul style="list-style-type: none"> • Details of manufacturing facility / equipment • Details of manufacturing process • Manufacturing Capacity
5.	Grounding Material	<p><u>Manufacturing Experience Criteria</u></p> <p>i. The manufacturer must have manufacturing experience of similar Equipment/Goods with similar or higher rating in capacity.</p> <p><u>Performance Criteria</u></p> <p>The above Equipment/Goods supplied by the manufacturer should have been in satisfactory operation for a continuous period of at least three years [at least one end user certificate to be outside country of manufacturer] or satisfactory operational experience of one year in NGC/DISCOs/ K-Electric prior to deadline for submission of Bids.</p>	<ul style="list-style-type: none"> • Form EXP-3 • Reference list • Contract agreements copies (with English translation) • Completion certificate(s)/ delivery document(s) (bill(s) of lading, inspection certificate(s) etc.) for the contract(s). • Authorization letter • ISO certificates • Technical data sheets • Drawings <p>At least one (01) satisfactory operational certificate shall be submitted with the bid from the end user from Pakistan or outside the country of origin of the offered equipment / goods. The submitted operational certificate must indicate the name of the end user/client along with its contact address, phone numbers, fax numbers, web-site and e-mail addresses. The bidder must also submit with the bid copies of contract agreements along with performance certificates duly notarized (along with translation in English if original is in different language) for these supplies.</p> <p>The manufacturer shall</p>

No.	Equipment/ Services	Minimum Criteria	Document Submission Requirements
			<p>provide the following information with the Bid to establish its capacity/capability to execute the order.</p> <ul style="list-style-type: none"> • Details of manufacturing facility / equipment • Details of manufacturing process • Manufacturing Capacity
6.	Installation Works Subcontractor	<p><u>Installation Experience Criteria</u></p> <p>i. The subcontractor must have experience in installation of double circuit bundled transmission lines with a voltage rating of 380 kV or higher.</p> <p><u>Performance Criteria</u></p> <p>The above transmission line(s) completed by the subcontractor should have been in satisfactory operation for a continuous period of at least three years [at least one end user certificate to be outside country of manufacturer] or satisfactory operational experience of one year in NGC/DISCOs/ K-Electric prior to deadline for submission of Bids.</p>	<ul style="list-style-type: none"> • Form EXP-3 • Reference list • Contract agreements copies (with English translation) • Completion certificate(s) for the contract(s). • Authorization letter <p>At least one (01) satisfactory operational certificate shall be submitted with the bid from the end user from Pakistan or outside the country of origin of the subcontractor. The submitted operational certificate must indicate the name of the end user/client along with its contact address, phone numbers, fax numbers, web-site and e-mail addresses. The bidder must also submit with the bid copies of contract agreements along with performance certificates duly notarized (along with translation in English if original is in different language) for these supplies.</p>

No.	Equipment/ Services	Minimum Criteria	Document Submission Requirements
7.	Civil Works Subcontractor	<p><u>Installation Experience Criteria</u></p> <p>ii. The subcontractor must have experience in civil works of double circuit transmission lines with a voltage rating of 380 kV or higher.</p> <p><u>Performance Criteria</u></p> <p>The above transmission line(s) completed by the subcontractor should have been in satisfactory operation for a continuous period of at least three years [at least one end user certificate to be outside country of manufacturer] or satisfactory operational experience of one year in NGC/DISCOs/ K-Electric prior to deadline for submission of Bids.</p>	<ul style="list-style-type: none"> • Form EXP-3 • Reference list • Contract agreements copies (with English translation) • Completion certificate(s) for the contract(s). • Authorization letter <p>At least one (01) satisfactory operational certificate shall be submitted with the bid from the end user from Pakistan or outside the country of origin of the subcontractor. The submitted operational certificate must indicate the name of the end user/client along with its contact address, phone numbers, fax numbers, web-site and e-mail addresses. The bidder must also submit with the bid copies of contract agreements along with performance certificates duly notarized (along with translation in English if original is in different language) for these supplies.</p>

For the above items, to demonstrate compliance, subcontractors /manufacturers must submit a copy of business registration or similar document to establish the number of years of operation.

The material/ equipment offered by the bidder at the time of the bid shall not be changeable later on. Also the bidder shall not propose more than three (03) manufacturers for any major item.

In case of a Bidder who offers to supply and install major items of plant under the contract, which the Bidder did not manufacture or otherwise produce, the Bidder shall provide the Manufacturer's authorization, using the form provided in Section 4 (Bidding Forms), showing that the Bidder has been duly authorized by the Manufacturer or producer of the related plant and equipment or component to supply and install that item in the Employer's country. Failure to submit the Manufacturer's authorization at the first instance is considered a minor, nonmaterial omission and shall be subject to clarification. However, failure of the Bidder to submit the omitted authorization shall lead to rejection of the Subcontractor or Manufacturer of the item under evaluation in accordance with ITB 39.2.

2. Evaluation

The evaluation methodology shall be based on merit point criteria where scores are applied to the evaluation of the Technical Proposals and, thereafter, a combination of technical weighted score and financial weighted score is calculated using the weights specified in ITB 39.1.

The Most Advantageous bid is the one that:

- (i) is substantially responsive to the bidding document, and
- (ii) has the highest score of the combined technical and financial evaluation.

2.1. Technical Evaluation

2.1.1. Determination of Substantial Responsiveness

Prior to scoring the technical factors and/or sub-factors of the technical proposal, a determination of responsiveness shall be carried out in accordance with ITB 30 and ITB 31. This determination may include the verification of the following criteria:

Criteria	Compliance Requirements	Documents
Requirement	Single Entity or Joint Venture/Consortium	Submission Requirements
Compliance with the requirement for a defined completion time (when no alternative completion time is allowed).	Must meet requirement without material deviation, reservation, or omission	Technical Proposal
Responsiveness of the bidder's Environmental, Health, and Safety Management Plan (EHSMP) to the requirements of the project Environmental Management Plan (EMP).	Must meet requirement without material deviation, reservation, or omission	Technical Proposal
Responsiveness of the bidder's proposal demonstrating bidder's approach to fulfilling the 50% local labor requirement	Must meet requirement without material deviation, reservation, or omission	Technical Proposal
Compliance of offered equipment, listed in Form of Proposed Subcontractors / Manufacturer for Major item of Plant and Services, to Employer's Requirements and Specifications therein. This shall include but not limited to evaluation of Schedule of Technical Data of the equipment pursuant to clause-2.5 of Section-6 (Employer's Requirements).	Must meet requirement without material deviation, reservation, or omission	Technical Proposal
Compliance with NGC (formerly NTDC) Type Test Policy and evaluation/assessment of Type Test Reports of offered equipment, listed in Form of		

Proposed Subcontractors / Manufacturer for Major item of Plant and Services, pursuant to Clause 2.4 (Technical Specification) of Section-6 (Employer's Requirements). Pursuant to ITB 11.2(j) (vii), in case of failure to submit an Undertaking of type tests as per NGC (formerly NTDC) type test policy along with the bid or in response to post bid clarification, such manufacturer shall not be accepted and bidder will be bound to replace the same with acceptable manufacturer. All Type Test certificates/reports, reference list, etc. shall be in English language.		
Compliance with other sustainable procurement, if applicable.	Must meet requirement without material deviation, reservation, or omission	Technical Proposal
Other compliance requirements indicated in the Bidding Document.	Must meet requirement without material deviation, reservation, or omission	Technical Proposal

If the technical proposal is declared not substantially responsive to the requirements of the Bidding Document, the Bid shall be rejected, and it shall not be evaluated further. However, noncompliance with equipment requirements described in Section 6 (Employer's Requirements) shall not normally be a ground for bid rejection, and such noncompliance will be subject to clarification during bid evaluation and rectification prior to contract award.

2.1.2. Technical Scoring

The evaluation approach shall be based on a scoring methodology as per the principles spelled out below:

Technical Factors	Weightings (1)	Scores (2)	Weighted Score (1) x (2)
1. Construction Methodology	50%	(max = 10)	T1
2. Materials, Equipment, and Logistics	25%	(max = 10)	T2
3. Environmental, Health and Safety (or Environmental and Social)	15%	(max = 10)	T3
4. Sustainability	10%	(max = 10)	T4
Total Technical Factor(s) Score (T)	100%		T1 + T2 + T3 + T4

Evaluation of the Technical Factors

The number of points to be assigned for each sub-factor mentioned above shall be broken down as follows:

Technical Factors	Weightings (1)	Scores (2)	Weighted Score (1) x (2)
1. Construction Methodology	%	(max = 10)	T1
	Sub-Factor Weightings (1)	Score (2)	Weighted Score (1) x (2)
i. General Construction Strategy and Methodology	30%	(max = 10)	
ii. Construction Schedule - Mobilization Plan	10%	(max = 10)	
iii. Stakeholder Management	20%	(max = 10)	
iv. Construction Schedule (alternatives)	30%	(max = 10)	
v. Record Keeping	10%	(max = 10)	
Subtotal Score T1	100%		
2. Materials, Equipment, and Logistics	%	(max = 10)	T2
	Sub-Factor Weightings (1)	Score (2)	Weighted Score (1) x (2)
i. Supply Chain	30%	(max = 10)	
ii. Equipment Compliance	30%	(max = 10)	
iii. Specialized Equipment	30%	(max = 10)	
iv. Minimisation of Waste	10%	(max = 10)	
Subtotal Score T2	100%		
3. Environmental, Health and Safety (or Environmental and Social)	%	(max = 10)	T3
	Sub-Factor Weightings (1)	Score (2)	Weighted Score (1) x (2)
i. Site Health and Safety	100%	(max = 10)	
Subtotal Score T3	100%		
4. Sustainability	%	(max = 10)	T4
	Sub-Factor Weightings (1)	Score (2)	Weighted Score (1) x (2)
i. Local Participation - Employment Plans	100%	(max = 10)	
Subtotal Score T4	100%		

The technical factor(s)/sub-factor(s), as listed in the previous table(s), shall be scored based on the following narrative evaluation criteria:

1. Construction Methodology		
Score	Rating	Description of Submission
10	Outstanding	<p>Submission exceeds expectations and requirements in all aspects of the criterion. Exceptional understanding of the criterion is demonstrated through superior methodology supported by clear and credible evidence. Submission includes major innovation and value-added features with a clear implementation plan for proposed features.</p> <p>An exceptional and comprehensive document management and record-keeping system is demonstrated, supported by clear, credible, and verifiable procedures. The system provides robust controls for creation, review, approval, version control, storage, retrieval, archiving, access, and traceability of project records. Clear responsibilities, integration with contractual, technical, quality, environmental, health and safety, and reporting requirements, and comprehensive sample templates are provided.</p>
9	Excellent	<p>Submission exceeds expectations and requirements in most aspects of the criterion. Excellent understanding of the criterion is demonstrated through well-articulated methodology supported by strong evidence. Submission includes major innovation and value-added features but lacks an implementation plan for proposed features.</p> <p>An excellent document management and record-keeping system is demonstrated through well-articulated procedures covering document control, version control, approvals, storage, retrieval, access, and traceability, supported by strong evidence and appropriate sample templates. Clear responsibilities and integration with project and contractual requirements are demonstrated.</p>
8	Good	<p>Submission exceeds expectations and requirements in some aspects of the criterion. Good understanding of the criterion is demonstrated through structured and well-developed methodology supported by reasonable and verifiable evidence. Submission includes some innovation and value-added features with an implementation plan for proposed features.</p> <p>A good and well-developed document management and record-keeping system is demonstrated, with appropriate procedures for document creation, control, storage, retrieval, approvals, and traceability. The submission provides reasonable and verifiable evidence and suitable sample records/templates.</p>
7	Above average	<p>Submission meets expectations and requirements in all aspects of the criteria. Sound understanding of the criterion is demonstrated through a thorough methodology with no weakness and supported by reasonable evidence but is difficult to verify. Submission includes minor innovation and value-added features but lacks an implementation plan for proposed features.</p> <p>A sound and comprehensive record-keeping system is demonstrated, covering document control, version management, access, approvals, storage, retrieval, and archiving. Responsibilities are clearly identified and the system is generally aligned with contractual and project requirements. Sample templates are provided and are generally suitable, although some aspects may be difficult to verify or lack detail.</p>
6	Average	<p>Submission meets expectations and requirements in most aspects of the criterion. Adequate understanding of the criterion is demonstrated through a competent methodology with negligible weakness. Submission includes no innovation or value-added</p>

		<p>features.</p> <p>An adequate and competent record-keeping system is proposed, covering the principal document control and record-management requirements. Procedures and responsibilities are generally appropriate, with negligible weaknesses. Sample templates and records are provided but offer limited additional features or detail.</p>
5	Below average	<p>Submission meets requirements in some aspects of the criterion. Understanding of the criterion is below average, and methodology contains minor weaknesses. Submission provides sufficient assurance of ability to deliver the criterion.</p> <p>The proposed record-keeping system demonstrates a below-average understanding of project document management and contains minor weaknesses in areas such as version control, traceability, access, storage, retrieval, or archiving. The submission provides sufficient assurance of the bidder's ability to maintain project records, but important aspects lack detail.</p>
4	Marginal	<p>Submission marginally meets requirements of the criterion. Methodology demonstrates some understanding of the criterion with some weakness. Submission provides moderate assurance of ability to deliver the criterion.</p> <p>The proposed record-keeping system demonstrates some understanding of document management but contains weaknesses in several important areas, such as document control, responsibilities, traceability, retrieval, or archiving. Sample records/templates may be incomplete or insufficient. The submission provides moderate assurance of the bidder's ability to maintain adequate project records.</p>
3	Poor	<p>Submission fails to meet most requirements of the criterion. Methodology has major weakness and/or discrepant information. Submission provides little assurance of ability to deliver the criterion.</p> <p>The proposed record-keeping system has major weaknesses, omissions, and/or inconsistent information. Important procedures for document control, version management, approvals, storage, retrieval, or traceability are inadequately addressed. The submission provides little assurance of the bidder's ability to maintain reliable and compliant project records.</p>
2	Very poor	<p>Submission fails to meet major requirements of the criterion. Methodology has substantial weaknesses and/or irrelevant information. Submission provides no assurance of ability to deliver the criterion.</p> <p>The proposed record-keeping arrangements contain substantial weaknesses and/or irrelevant information. Significant elements of document management, record control, traceability, responsibilities, or compliance are missing. The submission provides no meaningful assurance of the bidder's ability to maintain an effective project record-keeping system.</p>
1	Unacceptable	<p>Submission fails to meet all requirements of the criterion. Methodology has significant omissions or irrelevant information.</p> <p>The submission contains significant omissions and/or irrelevant information and does not demonstrate an acceptable document management or record-keeping system. Essential arrangements for controlling, storing, retrieving, protecting, and maintaining project records are absent or fundamentally inadequate.</p>

2. Materials, Equipment, and Logistics		
Score	Rating	Description of Submission
10	Outstanding	Submission exceeds expectations and requirements in all aspects of the criterion. Exceptional understanding of the criterion is demonstrated through a superior approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization, supported by clear and credible evidence. Submission demonstrates robust arrangements for sourcing and timely availability of critical materials and equipment, quality assurance throughout the supply chain, equipment mobilization, maintenance and contingency provisions, and practical measures to minimize, reuse, or recycle waste. Submission includes major innovation and value-added features with a clear implementation plan for proposed features.
9	Excellent	Submission exceeds expectations and requirements in most aspects of the criterion. Excellent understanding of the criterion is demonstrated through a well-articulated approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization, supported by strong evidence. Submission demonstrates effective arrangements for critical material and equipment sourcing, quality assurance, equipment mobilization and maintenance, specialized equipment deployment, logistics, and waste minimization. Submission includes major innovation and value-added features but lacks an implementation plan for proposed features.
8	Good	Submission exceeds expectations and requirements in some aspects of the criterion. Good understanding of the criterion is demonstrated through a structured and well-developed approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization, supported by reasonable and verifiable evidence. Submission demonstrates appropriate arrangements for material and equipment availability, supply chain quality control, equipment deployment and maintenance, logistics, and practical waste minimization measures. Submission includes some innovation and value-added features with an implementation plan for proposed features.
7	Above average	Submission meets expectations and requirements in all aspects of the criterion. Sound understanding of the criterion is demonstrated through a thorough approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization, with no weakness and supported by reasonable evidence but is difficult to verify. Submission demonstrates adequate arrangements for sourcing and delivery of materials, equipment availability and mobilization, maintenance and contingency measures, logistics, and waste minimization. Submission includes minor innovation and value-added features but lacks an implementation plan for proposed features.
6	Average	Submission meets expectations and requirements in most aspects of the criterion. Adequate understanding of the criterion is demonstrated through a competent approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization, with negligible weakness. Submission provides generally adequate arrangements for material and equipment sourcing, supply chain quality assurance, equipment deployment

		and maintenance, logistics, and waste management. Submission includes no innovation or value-added features.
5	Below average	Submission meets requirements in some aspects of the criterion. Understanding of the criterion is below average, and the proposed approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization contains minor weaknesses. Some arrangements for material and equipment availability, supply chain management, equipment deployment, logistics, and waste minimization are adequately described, but important aspects lack sufficient detail. Submission provides sufficient assurance of ability to deliver the criterion.
4	Marginal	Submission marginally meets requirements of the criterion. The proposed approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization demonstrates some understanding of the criterion with some weakness. Arrangements for critical materials and equipment, supply chain risks, equipment mobilization and maintenance, logistics, or waste minimization are partially addressed or lack adequate detail. Submission provides moderate assurance of ability to deliver the criterion.
3	Poor	Submission fails to meet most requirements of the criterion. The proposed approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization has major weaknesses and/or discrepant information. Significant deficiencies are evident in arrangements for sourcing and availability of critical materials and equipment, quality assurance, equipment deployment and maintenance, logistics, risk management, or waste minimization. Submission provides little assurance of ability to deliver the criterion.
2	Very poor	Submission fails to meet major requirements of the criterion. The proposed approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization has substantial weaknesses and/or irrelevant information. Major elements relating to critical material and equipment availability, supply chain quality assurance, equipment mobilization and maintenance, specialized equipment, logistics, contingency measures, or waste minimization are inadequately addressed or omitted. Submission provides no assurance of ability to deliver the criterion.
1	Unacceptable	Submission fails to meet all requirements of the criterion. The proposed approach to supply chain management, equipment compliance and availability, specialized equipment, logistics, material handling and storage, and waste minimization has significant omissions or irrelevant information. The submission does not demonstrate an acceptable approach to ensuring the availability and quality of materials and equipment, effective logistics and material handling, equipment mobilization and maintenance, management of specialized equipment, or minimization of construction waste.

3. Environmental, Health and Safety (or Environmental and Social)

Score	Rating	Description of Submission
10	Outstanding	Submission exceeds expectations and requirements in all aspects of the criterion. Exceptional understanding of the criterion is demonstrated through a superior approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls, supported by clear and credible evidence. Submission demonstrates comprehensive and project-specific arrangements for managing H&S risks, emergency preparedness, safe access and work areas, worker and public protection, competent H&S personnel, training, and continuous risk management. Submission includes major innovation and value-added features with a clear implementation plan for proposed features.
9	Excellent	Submission exceeds expectations and requirements in most aspects of the criterion. Excellent understanding of the criterion is demonstrated through a well-articulated approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls, supported by strong evidence. Submission demonstrates effective and practical arrangements for managing project-specific H&S risks, emergency response, site security, worker and public safety, competent H&S personnel, and training. Submission includes major innovation and value-added features but lacks an implementation plan for proposed features.
8	Good	Submission exceeds expectations and requirements in some aspects of the criterion. Good understanding of the criterion is demonstrated through a structured and well-developed approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls, supported by reasonable and verifiable evidence. Submission demonstrates appropriate arrangements for site layout and safety facilities, access and egress, security, H&S staffing, induction and training, risk assessment, work controls, and emergency arrangements. Submission includes some innovation and value-added features with an implementation plan for proposed features.
7	Above average	Submission meets expectations and requirements in all aspects of the criterion. Sound understanding of the criterion is demonstrated through a thorough approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls, with no weakness and supported by reasonable evidence but is difficult to verify. Submission demonstrates adequate project-specific arrangements for H&S facilities, site security, competent H&S personnel, worker induction and training, hazard identification, risk assessment, and implementation of appropriate control measures. Submission includes minor innovation and value-added features but lacks an implementation plan for proposed features.
6	Average	Submission meets expectations and requirements in most aspects of the criterion. Adequate understanding of the criterion is demonstrated through a competent approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls, with negligible

		weakness. Submission provides generally adequate arrangements for site safety facilities, security, H&S personnel, induction and training, hazard identification, risk assessment, and application of control measures. Submission includes no innovation or value-added features.
5	Below average	Submission meets requirements in some aspects of the criterion. Understanding of the criterion is below average, and the proposed approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls contains minor weaknesses. Some arrangements for site safety, security, H&S staffing, training, hazard identification, risk assessment, and control measures are adequately described, but important aspects lack sufficient detail. Submission provides sufficient assurance of ability to deliver the criterion.
4	Marginal	Submission marginally meets requirements of the criterion. The proposed approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls demonstrates some understanding of the criterion with some weakness. Arrangements for site safety facilities, security, H&S personnel, training, hazard identification, risk assessment, emergency preparedness, or control measures are partially addressed or lack adequate detail. Submission provides moderate assurance of ability to deliver the criterion.
3	Poor	Submission fails to meet most requirements of the criterion. The proposed approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls has major weaknesses and/or discrepant information. Significant deficiencies are evident in project-specific H&S arrangements, site security, safety facilities, H&S personnel, training, risk assessment, emergency arrangements, or implementation of control measures. Submission provides little assurance of ability to deliver the criterion.
2	Very poor	Submission fails to meet major requirements of the criterion. The proposed approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls has substantial weaknesses and/or irrelevant information. Major elements relating to H&S facilities, site security, competent H&S personnel, training, hazard identification, risk assessment, emergency preparedness, or risk controls are inadequately addressed or omitted. Submission provides no assurance of ability to deliver the criterion.
1	Unacceptable	Submission fails to meet all requirements of the criterion. The proposed approach to site health and safety, site security, H&S facilities, H&S personnel, induction and training, hazard identification and risk assessment, and implementation of the hierarchy of controls has significant omissions or irrelevant information. The submission does not demonstrate an acceptable approach to managing project-specific H&S risks, protecting workers and the public, providing appropriate safety facilities and competent H&S personnel, conducting induction and training, or implementing effective hazard controls.

4. Sustainability		
Score	Rating	Description of Submission
10	Outstanding	The bidder commits to 81% or more local workforce participation . The plan demonstrates a highly robust, functional, and practical approach to maximizing local employment, with clearly defined recruitment procedures, effective skills-matching processes, meaningful engagement with local communities, and credible mechanisms to ensure sustained, inclusive, and equitable participation of local workers throughout the project implementation.
8	Good	The bidder commits to 71% to 80% local workforce participation . The plan demonstrates a robust and practical approach to maximizing local employment opportunities, including effective recruitment, skills development/matching, community engagement, and measures to support sustained and inclusive participation of local workers.
6	Average	The bidder commits to 61% to 70% local workforce participation . The plan demonstrates a well-developed and feasible approach covering recruitment procedures, skills-matching processes, local community engagement, and mechanisms for sustaining local workforce participation throughout project implementation.
3	Marginal	The bidder commits to 51% to 60% local workforce participation . The plan demonstrates a reasonable approach to local recruitment, skills matching, and engagement with local communities, with mechanisms to facilitate sustained participation of local workers.

After determining the technical factors score, the next step is to calculate the technical weighted score. The following formula will be used to calculate a Bidder's technical weighted score (T_{ws}):

$$T_{ws} = T * T_{weight}$$

Where:

T_{ws}	=	Technical weighted score;
T	=	Total technical score given to the Bid;
T_{weight}	=	Technical weight being equal to 10.

2.2. Financial Evaluation

2.2.1 Detailed Financial Evaluation

Prior to financial scoring, it is necessary to conduct a detailed price comparison on the following criteria in addition to the criteria listed in ITB 38.2 I (a–f), the evaluated bid price shall be determined using the following method:

2.2.1.1 Quantifiable Nonconformities and Omissions

Pursuant to ITB 33.3, the cost of all quantifiable nonmaterial nonconformities shall be evaluated, including omissions in Daywork where competitively priced but excluding omission of prices in the Schedule of Priced Activities and Sub-Activities. The Employer will make its own assessment of the cost of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of Bids.

(a) Financial Adjustment of Bid Price (Commercial Aspects)

The evaluation of a bid will take into account, in addition to the Bid Price, the following commercial factors (adjustments) in the manner and the extent indicated hereof, to determine the Evaluated Bid Price.

i. Price Adjustment for Deviation in Terms of Payment

If a bid deviates from the terms of payment/payment conditions as specified in the Conditions of Contract and if such deviation is considered acceptable to the Employer, mark-up earned for any earlier payments involved in the terms outlined in the bid as compared to those stipulated in the Conditions of Contract shall be calculated at the following mark-up rates:

- For foreign currency component: LIBOR (1-Month) notified by ICE on date of opening of bid.
- For local currency component: KIBOR (1-Month, Offer) notified by SBP on date of opening of bid.

And shall be added to the Corrected Total Bid Price for comparison purpose only.

ii. Price Adjustment on account of Late Completion (NOT APPLICABLE)

(b) Financial Adjustment of Bid Price (Technical Aspects)

In addition to price adjustment due to commercial aspects, the price of bid will also be adjusted on account of minor technical omission/noncompliance and due to minor omissions or missing items in the scope of supply, services, etc. in the manner and to the extent indicated hereof, to determine the Evaluated Bid Price.

i. Price Adjustment for Completeness in Scope of Supply

The cost of minor missing items in the scope of supply, services, etc. shall be added to the bid price to allow for bid comparison on an equal basis. The price adjustment shall be based on a reasonable estimate of the cost by the bid evaluation committee, taking into consideration the corresponding quoted prices from next higher responsive bid.

2.2.1.2 Domestic Preference

Domestic preference will be granted to eligible domestically produced Plant and Equipment in accordance with the following provisions:

- (a) The preference margin shall not be applied to the whole facility but only to the eligible domestically produced Plant and Equipment within the contract.
- (b) Plant and Mandatory Spare Parts supplied from abroad shall be quoted CIP. Plant and Mandatory Spare Parts supplied from within the Employer's country shall be

quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable) free of sales and similar taxes.

- (c) All other cost components for services and works, such as costs for design, local handling, transportation, storage, installation, and commissioning shall be quoted separately.
- (d) In the comparison of Bids, only the CIP price component of each Bid for the Plant and Equipment offered from outside the Employer's country shall be increased by 15%.
- (e) No domestic preference shall be applied to any of the Services or Works included in the contract.
- (f) Bidders shall not be permitted or required to modify the mix of local and foreign Plant and Equipment after bid opening.

2.2.1.3 Life Cycle Costs

Life cycle costing shall not apply.

2.2.1.4 Time Schedule

Time to complete the plant and services from the effective date specified in Article 3 of the Contract Agreement for determining the Time for Completion including commissioning activities is 28 calendar months.

No credit will be given for earlier completion. A bid offering completion period beyond the stipulated completion time shall be considered non-responsive and rejected.

2.2.1.5 Functional Guarantees of the Facilities

NOT APPLICABLE

2.2.1.6 Work, Services, Facilities, etc., to be provided by the Employer

Where bids include the undertaking of work or the provision of services or facilities by the Employer in excess of the provisions allowed for in the Bidding Document, the Employer shall assess the costs of such additional work, services and/or facilities during the duration of the contract. Such costs shall be added to the bid price for evaluation.

2.2.2 Financial Scoring

After evaluating the bid price of each Bidder, the next step is to conduct the financial scoring. The following formula will be used to calculate a Bidder's financial weighted score (F_{ws}).

$$F_{ws} = P_{low}/P * F_{weight}$$

Where:

F_{ws} = Financial weighted score;

P = Evaluated Bid Price of the Bid;

P_{low} = Lowest of all evaluated Bid Price among all bids in compliance; and

F_{weight} = Financial weight being equal to 90.

2.3. Combined Technical and Financial Scores

The combined score (CS) shall be calculated for each substantially responsive bid using the following formula:

$$CS = P_{\text{low}}/P * F_{\text{weight}} + T * T_{\text{weight}}$$

The Most Advantageous bid shall be the one that obtains the highest CS.

2.4. Multiple Contracts (NOT APPLICABLE)

Schedule – G

**SPECIFIC PLANT DATA FOR
500kV TRANSMISSION LINE TOWERS**

Sr. No.	Information Required	'A'	'B'	'C'
1.	Origin of Steel (Maker's Name & Address)			
2.	Origin of Towers (Maker's Name & Address)			
3.	Origin of Nuts & Bolts (Maker's Name & Address)			
4.	Name and Address of Fabricators			
5.	Name and Address of Galvanizer			
6.	Steel as per ASTM 36 or Equivalent for Members other than Marked "H" for Tower types "DS1", "DA1" & "DD1"			
	a) Grade	36		
	b) Ultimate Tensile Stress, MPa	400 – 550		
		250		
	c) Minimum Guaranteed Yield Stress, MPa			
	d) Minimum Elongation in gauge length of 200mm/50mm	20% in 200mm 21% in 50mm		
	e) Bend Ratio as per Clause 2.2.2 of Technical Provisions of the Bidding Documents	1.5t		
	f) Chemical Properties			
	- Carbon % ≤	0.26		
	- Manganese % ≤	*		
	- Phosphorus % ≤	0.04		
	- Sulfurs % ≤	0.05		
7.	Steel as per EN10025, S355J2 for Members Marked "H" high strength or equivalent for Tower types "DS1", "DA1", "DD1" & "TDT"			
	a) Grade	S355J2		
	b) Ultimate Tensile Stress, MPa	470 – 630		
	c) Minimum Guaranteed Yield Stress, MPa	355 for t ≤ 16mm & 345 for 16 < t ≤ 40mm		
	d) Minimum Elongation in gauge length of 200mm/50mm	23% in Lo=5.65√S0		
	e) Bend Ratio as per Clause 2.2.2 of Technical Provisions of the Bidding Documents	Up to 25mm 1.5t & Over 25mm 2.0t		
	f) Chemical Properties			
	- Carbon % ≤	0.23		
	- Manganese % ≤	1.7		
	- Phosphorus % ≤	0.035		
	- Sulfurs % ≤	0.035		
8.	Steel as per ASTM A572 Gr.60 or equivalent for Members Marked "HH" for Tower Type "DS1", "DA1", "DD1" &			

- 500 kV Double Circuit Quad Bundle Transmissions line for:**
- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.1- PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD

Item No.	Description	Country of Origin	Unit	Qty	Unit of Currency	Unit Price CIP (Ghazi Barotha / Faisalabad / Islamabad)	Total Price	Taxes & Duties (PKR)
1	2	3	4	5	6	7	8=5x7	9
I	500kV Transmission Line							
A	Steel Towers							
1	Furnish 500kV double circuit towers DS1, DA1, DD1 & TDT alongwith accessories including anti-theft bolts, anti-climbing devices, number plates, danger signs, phase plates, aerial marker plates and Bird Guards (See Note-1&2) and in accordance with requirements of Technical Provisions/Specifications & Drawings.							
	(a) Tower Type "DS1"							
	(i) Basic Tower Body		No.	592				
	(ii) 2.0 m Single Leg Extension		No.	164				
	(iii) 4.0 m Single Leg Extension		No.	528				
	(iv) 6.0 m Single Leg Extension		No.	916				
	(v) 8.0 m Single Leg Extension		No.	760				
	(vi) 6.0 m Body Extension		No.	58				
	(vii) Stubs		No.	2,368				
	(b) Tower Type "DA1"							
	(i) Basic Tower Body		No.	205				
	(ii) 2.0 m Single Leg Extension		No.	40				
	(iii) 4.0 m Single Leg Extension		No.	148				
	(iv) 6.0 m Single Leg Extension		No.	184				
	(v) 8.0 m Single Leg Extension		No.	448				
	(vi) 6.0 m Body Extension		No.	65				
	(vii) Stubs		No.	820				
	(c) Tower Type "DD1"							
	(i) Basic Tower Body		No.	108				
	(ii) 2.0 m Single Leg Extension		No.	32				
	(iii) 4.0 m Single Leg Extension		No.	96				
	(iv) 6.0 m Single Leg Extension		No.	108				
	(v) 8.0 m Single Leg Extension		No.	196				
	(vi) 6.0 m Body Extension		No.	31				
	(vii) Stubs		No.	432				
	(d) Tower Type "TDT"							
	(i) Basic Tower Body		No.	5				
	(ii) 8.0 m Single Leg Extension		No.	20				
	(iii) Stubs		No.	20				
2	Supply of additional weight of steel members/plates, corresponding to the increased weight arising from upgraded member or plate sizes necessitated by the installation of bird flight diverters, as determined from the engineering works described in Schedule No 3, Item No. 1. (For Bird Diverters Portion Only)		Metric Ton	3				
	Sub-Total A :							
B	Conductor and OPGW (With Associated Equipment)							
1	Furnish 795 KCM ACSR "Drake" Conductor		km	7,280				
2	Furnish							
	(a) OPGW with at least 24 fibers		km	640				
	(b) Joint boxes for OPGW							
	(i) OPGW-OPGW (A Type)		No.	150				
	(ii) OPGW-OPGW Cable (B Type)		No.	10				
	(iii) OPGW-attaching Clamps		No.	9,600				
	(c) Test Equipment, Installation and Maintenance Tools							
	- Fiber Optic Talk Set (Set comprised two units)		Set	2				
	- Fiber Optic Tool Kit		Set	2				
	- OTDR with range ≥ 400km Yokogawa AQ7260 or equivalent		Set	2				
	Sub Total B :							
C	Insulator Hardware Assemblies (Complete Hardware Strings for Quad Bundle ACSR Drake Conductor)							
1	Furnish Single 'V' String Suspension Assemblies type "VS(4)" including 29x2 Nos.160 kN E&M Strength Insulators (Porcelain or Glass)* for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E001		Set	1,620				
1(a)	Furnish Single 'V' String Suspension Assemblies type "VS(4)" including 29x2 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E001		Set	1,932				

- 500 kV Double Circuit Quad Bundle Transmissions line for:**
- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.1- PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD

Item No.	Description	Country of Origin	Unit	Qty	Unit of Currency	Unit Price CIP (Ghazi Barotha / Faisalabad /Islamabad)	Total Price	Taxes & Duties (PKR)
1	2	3	4	5	6	7	8=5x7	9
2	Furnish Single 'V' String Suspension Assemblies type "VJ(4)" including 36x2 Nos. 80 kN E&M Strength Insulators (Porcelain or Glass)* for double circuit tower type 'DA1' & 'DD1' as per specification drawing No. 4029/169/401C/TD/01E002		Set	1,002				
2(a)	Furnish Single 'V' String Suspension Assemblies type "VJ(4)" including 36x2 Nos. Pre-RTV Coated 80 kN E&M Strength Insulators (Porcelain or Glass)* for double circuit tower type 'DA1' & 'DD1' as per specification drawing No. 4029/169/401C/TD/01E002		Set	876				
3	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower types 'DA1' & 'DD1' including 29x4 Nos. 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005		Set	2,004				
3(a)	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower types 'DA1' & 'DD1' including 29x4 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005		Set	1,752				
4	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower type 'TDT' including 29x4 Nos. 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005a		Set	16				
4(a)	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower type 'TDT' including 29x4 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005a		Set	24				
5	Furnish Single string Transposition Assembly Upright type "TDTU(4)" including 36 Nos. 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E006		Set	8				
5(a)	Furnish Single string Transposition Assembly Upright type "TDTU(4)" including 36 Nos. Pre-RTV Coated 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E006		Set	12				
6	Furnish Single string Transposition Assembly Inverted type "TDTI(4)" including 36 Nos. 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E007		Set	8				
6(a)	Furnish Single string Transposition Assembly Inverted type "TDTI(4)" including 36 Nos. Pre-RTV Coated 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E007		Set	12				
7	Furnish Quad string special dead end assemblies type "SDE(4)" including 29x4 Nos. 160kN E&M strength insulators for tower type "TDT" as per specification drawing No. 4029/169/401C/TD/01E008 (extension link of 3.5m in length)		Set	8				
7(a)	Furnish Quad string special dead end assemblies type "SDE(4)" including 29x4 Nos. Pre-RTV Coated 160kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" as per specification drawing No. 4029/169/401C/TD/01E008 (extension link of 3.5m in length)		Set	12				
8	Furnish Pipe Jumper Assembly type "VJT(4)" including 54x4 Nos. 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including jumper spacers & special jumper spacers as per specification drawing No. 4029/169/401C/TD/01E009		Set	8				
8(a)	Furnish Pipe Jumper Assembly type "VJT(4)" including 54x4 Nos. Pre-RTV Coated 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including jumper spacers & special jumper spacers as per specification drawing No. 4029/169/401C/TD/01E009		Set	12				
9	Furnish Special Tension Clamp for tower type "TDT" as per specification drawing No. 43.55.67.295P		Set	80				
10	Furnish Jumper Compression Dead End Clamp for tower type "TDT" as per specification drawing No. 50.57.84.05P		Set	320				
11	Furnish Straight Compression Dead End Clamp for tower type "TDT" as per specification drawing No. 50.77.84.05		Set	80				

- 500 kV Double Circuit Quad Bundle Transmissions line for:**
- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.1- PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD

Item No.	Description	Country of Origin	Unit	Qty	Unit of Currency	Unit Price CIP (Ghazi Barotha / Faisalabad /Islamabad)	Total Price	Taxes & Duties (PKR)
1	2	3	4	5	6	7	8=5x7	9
12	Furnish Double String Dead End Assemblies for quad bundle "DSD1(4)" including 29x2 Nos. 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E010		Set	12				
12(a)	Furnish Double String Dead End Assemblies for quad bundle "DSD1(4)" including 29x2 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E010		Set	6				

- 500 kV Double Circuit Quad Bundle Transmissions line for:**
- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.1- PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD

Item No.	Description	Country of Origin	Unit	Qty	Unit of Currency	Unit Price CIP (Ghazi Barotha / Faisalabad / Islamabad)	Total Price	Taxes & Duties (PKR)
1	2	3	4	5	6	7	8=5x7	9
13	Furnish Double String Dead End Assemblies for quad bundle "DSD2(4)" including 29x2 Nos. 160 kN E&M Strength Insulators (Porcelain or Glass)* for Gantry side on Gantry span as per specification drawing No. 4029/169/401C/TD/01E011		Set	12				
13(a)	Furnish Double String Dead End Assemblies for quad bundle "DSD2(4)" including 29x2 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* for Gantry side on Gantry span as per specification drawing No. 4029/169/401C/TD/01E011		Set	6				
14	Submit Finite Element (FEM) Simulation for Electric Field (Potential) Distribution of Insulator Hardware Assemblies (items C1 - C8(a) and C12 - 13(a)) with Coulomb or ElecNET software.		Lumpsum	1				
Sub-Total C :								
D	Hardware for OPGW							
1	Furnish Suspension Assembly for OPGW including AGS clamp for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E012		Set	1,184				
2	Furnish Double Tension Set for jointing of OPGW on suspension tower as per specification drawing No. 4029/169/401C/TD/01E013		Set	128				
3	Furnish Double Tension Set for jointing / non jointing of OPGW on tension towers as per specification drawing No. 4029/169/401C/TD/01E014		Set	636				
Sub-Total D :								
E	Accessories and Dampers							
1	Furnish Conductor Compression Splice (pre-filled with appropriate filler compound) for 795 kcmil ACSR "Drake" Conductor.		No.	2,500				
2	Furnish Conductor Repair Sleeve for 795 KCM ACSR "Drake" Conductor.		No.	1,000				
3	Furnish Conductor Dead-End Compression Body (pre-filled with appropriate filler compound) including jumpers dead end terminal pads for 795 kcmil ACSR "Drake" Conductor.		No.	15,408				
4	Furnish Spacer Damper for 795 KCM ACSR "Drake" Conductor.		No.	40,392				
5	Furnish Stockbridge Vibration Dampers for 795 kcmil ACSR "Drake" Conductor (See Note-4)		No.	10,920				
6	Furnish stock bridge vibration dampers for OPGW.		No.	4,912				
Sub-Total E :								
F	Grounding Material							
1	Furnish 16 mm diameter 3.0 m long copper covered ground rods.		No.	1,820				
2	Furnish flat to cable connector.		No.	1,820				
3	Furnish cable to rod connector.		No.	1,820				
4	Furnish 7 No. 10 copper covered ground wire.		Meter	5,460				
Sub-Total F :								
G	Mandatory Spare Parts							
1	Steel Towers							
	Furnish 500kV double circuit towers DS1, DA1, DD1 & TDT alongwith accessories including anti-theft bolts, anti-climbing devices, number plates, danger signs, phase plates, aerial marker plates and Bird Guards (See Note-1&2) and in accordance with requirements of Technical Provisions/Specifications & Drawings.							
	(a) Tower Type "DS1"							
	(i) Basic Tower Body		No.	30				
	(ii) 2.0 m Single Leg Extension		No.	8				
	(iii) 4.0 m Single Leg Extension		No.	24				
	(iv) 6.0 m Single Leg Extension		No.	48				
	(v) 8.0 m Single Leg Extension		No.	40				
	(vi) 6.0 m Body Extension		No.	5				
	(vii) Stubs		No.	120				
	(b) Tower Type "DA1"							
	(i) Basic Tower Body		No.	20				
	(ii) 2.0 m Single Leg Extension		No.	4				
	(iii) 4.0 m Single Leg Extension		No.	12				
	(iv) 6.0 m Single Leg Extension		No.	20				
	(v) 8.0 m Single Leg Extension		No.	44				
	(vi) 6.0 m Body Extension		No.	7				
	(vii) Stubs		No.	80				
	(c) Tower Type "DD1"							
	(i) Basic Tower Body		No.	10				
	(ii) 2.0 m Single Leg Extension		No.	4				
	(iii) 4.0 m Single Leg Extension		No.	8				
	(iv) 6.0 m Single Leg Extension		No.	12				
	(v) 8.0 m Single Leg Extension		No.	16				

- 500 kV Double Circuit Quad Bundle Transmissions line for:**
- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.1- PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD

Item No.	Description	Country of Origin	Unit	Qty	Unit of Currency	Unit Price CIP (Ghazi Barotha / Faisalabad /Islamabad)	Total Price	Taxes & Duties (PKR)
1	2	3	4	5	6	7	8=5x7	9
	(vi) 6.0 m Body Extension		No.	4				
	(vii) Stubs		No.	40				
	(d) Tower Type "TDT"							

500 kV Double Circuit Quad Bundle Transmissions line for: i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)								
SCHEDULE NO.1- PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD								
Item No.	Description		Country of Origin	Unit	Qty	Unit of Currency	Unit Price CIP (Ghazi Barotha / Faisalabad /Islamabad)	Taxes & Duties (PKR)
1	2		3	4	5	6	7	8=5x7
	(i)	Basic Tower Body		No.	2			
	(ii)	8.0 m Single Leg Extension		No.	8			
	(iii)	Stubs		No.	8			
	Conductor and OPGW (With Associated Equipment)							
2	Furnish 795 KCM ACSR "Drake" Conductor			km	320			
3	Furnish							
	(a)	OPGW with at least 24 fibers		km	65			
	(b)	Joint boxes for OPGW						
	(i)	OPGW-OPGW (A Type)		No.	15			
	(ii)	OPGW-OPGW Cable (B Type)		No.	2			
	(iii)	OPGW-attaching Clamps		No.	960			
	(c)	Test Equipment, Installation and Maintenance Tools						
	-	Fiber Optic Talk Set (Set comprised two units)		Set	-			
	-	Fiber Optic Tool Kit		Set	-			
	-	OTDR with range ≥ 400km Yokogawa AQ7260 or equivalent		Set	-			
	Insulator Hardware Assemblies (Complete Hardware Strings for Quad Bundle ACSR Drake Conductor)							
4	Furnish Single 'V' String Suspension Assemblies type "VS(4)" excluding Insulators for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E001			Set	180			
5	Furnish Single 'V' String Suspension Assemblies type "VJ(4)" excluding Insulators for double circuit tower type 'DA1' & 'DD1' as per specification drawing No. 4029/169/401C/TD/01E002			Set	180			
6	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower types 'DA1' & 'DD1' excluding Insulators as per specification drawing No. 4029/169/401C/TD/01E005			Set	360			
7	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower type 'TDT' excluding Insulators (Porcelain or Glass)" as per specification drawing No. 4029/169/401C/TD/01E005a			Set	16			
8	Furnish Single string Transposition Assembly Upright type "TDTU(4)" excluding Insulators for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E006			Set	8			
9	Furnish Single string Transposition Assembly Inverted type "TDTI(4)" excluding Insulators for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E007			Set	8			
10	Furnish Quad string special dead end assemblies type "SDE(4)" excluding Insulators for tower type "TDT" as per specification drawing No. 4029/169/401C/TD/01E008 (extension link of 3.5m in length)			Set	8			
11	Furnish Pipe Jumper Assembly type "VJT(4)" excluding Insulators for tower type "TDT" including jumper spacers & special jumper spacers as per specification drawing No. 4029/169/401C/TD/01E009			Set	8			
12	Furnish Special Tension Clamp for tower type "TDT" as per specification drawing No. 43.55.67.295P			Set	32			
13	Furnish Jumper Compression Dead End Clamp for tower type "TDT" as per specification drawing No. 50.57.84.05P			Set	128			
14	Furnish Straight Compression Dead End Clamp for tower type "TDT" as per specification drawing No. 50.77.84.05			Set	32			
15	Furnish Double String Dead End Assemblies for quad bundle "DSD1(4)" excluding Insulators as per specification drawing No. 4029/169/401C/TD/01E010			Set	6			
16	Furnish Double String Dead End Assemblies for quad bundle "DSD2(4)" excluding Insulators for Gantry side on Gantry span as per specification drawing No. 4029/169/401C/TD/01E011			Set	6			
	Insulators							
17	Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)*			Nos.	27,840			
18	Pre-RTV Coated 80 kN E&M Strength Insulators (Porcelain or Glass)*			Nos.	7,632			
19	160 kN E&M Strength Insulators (Porcelain or Glass)* - uncoated			Nos.	27,840			
20	80 kN E&M Strength Insulators (Porcelain or Glass)* - uncoated			Nos.	7,632			
	Hardware for OPGW							

- 500 kV Double Circuit Quad Bundle Transmissions line for:**
- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.1- PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD

Item No.	Description	Country of Origin	Unit	Qty	Unit of Currency	Unit Price CIP (Ghazi Barotha / Faisalabad / Islamabad)	Total Price	Taxes & Duties (PKR)
1	2	3	4	5	6	7	8=5x7	9
21	Furnish Suspension Assembly for OPGW including AGS clamp for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E012		Set	60				
22	Furnish Double Tension Set for jointing of OPGW on suspension tower as per specification drawing No. 4029/169/401C/TD/01E013		Set	6				
23	Furnish Double Tension Set for jointing / non jointing of OPGW on tension towers as per specification drawing No. 4029/169/401C/TD/01E014		Set	64				
	Accessories and Dampers							
24	Furnish Conductor Compression Splice (pre-filled with appropriate filler compound) for 795 kcmil ACSR "Drake" Conductor.		No.	250				
25	Furnish Conductor Repair Sleeve for 795 KCM ACSR "Drake" Conductor.		No.	100				
26	Furnish Conductor Dead-End Compression Body (pre-filled with appropriate filler compound) including jumpers dead end terminal pads for 795 kcmil ACSR "Drake" Conductor.		No.	32,088				
27	Furnish Spacer Damper for 795 KCM ACSR "Drake" Conductor.		No.	3,000				
28	Furnish Stockbridge Vibration Dampers for 795 kcmil ACSR "Drake" Conductor		No.	744				
29	Furnish stock bridge vibration dampers for OPGW.		No.	376				
30	60 ton hydraulic compressor		No.	3				
31	100 ton hydraulic compressor		No.	3				
32	Compression dies for "Drake" conductor		No.	6				
33	Filler Compound, a carton of 100, 0.4536 kg tubes		Carton	3				
34	Electrical Joint compound, a carton of 100, 0.23 kg tubes.		Carton	3				
	Grounding Material							
35	Furnish 16 mm diameter 3.0 m long copper covered ground rods.		No.	124				
36	Furnish flat to cable connector.		No.	124				
37	Furnish cable to rod connector.		No.	124				
38	Furnish 7 No. 10 copper covered ground wire.		Meter	372				
	Transmission Line Condition Monitoring & Preventive Maintenance Systems and Tools & Plant							
39	Aerialtronics Aerial drone Altura Zenith (1.3.0) RTF - T3A Combo with Pensar for transmission line construction supervision and inspection which should be 500kV EMC certified; ferromagnetic interference protected; water, thermal and shock resistant; wide remote control range (3km radius or higher) and atleast 150 meter (elevation from ground) flying range with the payload capacity of atleast 3 kg along-with a compatible high-definition (1080p or higher) high-quality gyro-stabilized camera with the additional capability of detecting thermal hot-spots (thermal vision) along-with run-time camera output display to the pilot at ground and video recording. The drones shall include Photogrammetry software upgrade along with three (03) spare batteries and a battery flight case. A pilot (operator) training program (to atleast 06 persons) for the supplied drone devices is also included in this scope.		No.	3				
40	Ofil Systems DayCor® Lumina ^{HD} hand-held corona camera complete with all accessories including close-up lenses, CoronaWise reporting software, remote control, temperature and humidity meter, flight table, spare batteries and carrying case.		No.	3				
41	FLIR T660 15° (Wi Fi) hand-held thermography camera complete will all accessories including memory card, extra batteries, battery charger, nylon pouch, hard transport case.		No.	3				
42	Bushnell 15X56MM FORGE Binoculars with complete accessories and carrying case.		No.	10				
43	Bosch GLM400CL BLAZE™ Outdoor 400 Ft. Connected Lithium-Ion Laser Measure with Camera complete will all accessories including Micro USB Cable, Battery Charger, Hand Strap, Pouch and spare batteries.		No.	3				
44	BLUE STRIPE® USTS-050-MM Measuring Stick.		No.	5				
45	Wave Control SMP2 Field Strength Meter for EMF exposure with WP400 Probe including Field Meter PC Software, battery charger, carrying case with all necessary accessories.		No.	3				
46	Oregon 750 - hand held GPS		No.	4				
47	GPS Map64S - hand held GPS		No.	3				
48	Parachute Harness a) Parachute harness complete (D-D = 22 inch) b) Complete with Seat, Chest, Leg Straps and Shoulder pads etc. c) Pole Strap (Positioning Strap) Length 1.7 - 1.8 meter d) Lanyard with shock absorber, Length 1.5 meter (Medium and Large size)		Set	10				
49	Aluminum Cable Car for Spacer Damper Installation (for Quad Bundle Conductor)		No.	4				
50	Capstan Hoist (1 ton) with allied accessories and tower fitting assembly		No.	4				
51	Chain Hoist (3 ton)		No.	4				
52	Chain Hoist (6 ton)		No.	6				

- 500 kV Double Circuit Quad Bundle Transmissions line for:**
- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.1- PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD

Item No.	Description	Country of Origin	Unit	Qty	Unit of Currency	Unit Price CIP (Ghazi Barotha / Faisalabad /Islamabad)	Total Price	Taxes & Duties (PKR)
1	2	3	4	5	6	7	8=5x7	9
53	Chicago Conductor Grip for ACSR Drake		No.	24				
54	Cradle for 500kV Transmission Line Towers O&M (12ft x 1-1/4 inches)		Set	3				
55	Earthing Lead flexible 20mm ² to 6 inches x 10 ft long with tower & conductor clamps up to 22mm to 28mm size		Set	3				
56	Electric Bolt Cutter (upto 1.5 inch dia)		No.	3				
57	Hydraulic Conductor Cutter (upto 1.5 inch dia)		No.	3				
58	Karabiners 500lbs and 1000 lbs		No.	6				
59	Pully Block Three way (6 ton)		No.	3				
60	Pully Block Two way (6 ton)		No.	3				
61	Pully Block Single way 6 inch (6 ton)		No.	3				
62	Ratchet Hoist 3 ton		Set	3				
63	Torque Wrench (50 - 250ft-lbs)		No.	4				
64	Stocking Joints for ACSR Drake Conductor		No.	6				
Sub-Total of G :								
	Total of Item A							
	Total of Item B							
	Total of Item C							
	Total of Item D							
	Total of Item E							
	Total of Item F							
	Total of Item G							

Total of Schedule No. 1, column 8 to be carried to Schedule No.5 (Grand Summary)

* The Bidder shall specify the type of insulator being offered.

Notes:

- Reference drawings for Bird Guards, along with the installation list/BoQ for tower type TDT, are provided in Volume-III. The Contractor/Manufacturer shall be responsible for calculating and preparing the installation lists/BoQs/drawings of Bird Guards for tower types DS1, DA1 and DD1, following the same pattern, and shall include the cost in their quoted prices. Bird Guards shall be provided for all tower types accordingly.
- The tower drawings provided in Volume-III indicate normal bolts, which are for indicative purposes only. Anti-theft bolts shall be used for all towers.
- For Item No. I(A)(2): No additional payment shall be made for any change in steel grade. The bidder shall make its own assessment and include such costs in the tower prices. Only the cost corresponding to the difference in weight — i.e., the weight of the upgraded member size minus the weight of the original member size specified in the provided drawings — shall be covered under this item. Please note that no additional payment shall be admissible for any increase in weight, except in cases arising from the installation of bird flight diverters.
- The requirement and quantity of Stockbridge vibration dampers for ACSR 'Drake' conductor, whether for all spans or specific span lengths, shall be determined by the contractor/manufacturer/supplier based on an analytical damping study.
- The quantities specified in Price Schedule No. 1 are final, except for Item Nos. I(A)(2) and E(5). For these two items, the Contractor shall place orders to manufacturers after completion of detailed engineering. Payment for these two items shall be made as per actual supplied quantities.
- The bidder shall be responsible to furnish the tower material, OPGW, conductor, insulators, accessories, dampers & hardware for conductor and OPGW, for completion of line in all respect. Contractor will reconcile the material after completion and the left-over/spare material will be handed-over/shifted to the Employer's designated store.
- The contractor shall transport, unload and stack leftover/additional material from site to NGC designated Warehouse/Store at its own cost.
- Price of any other item, either covered or not in the Price Schedules but is required for the completion, commissioning and successful operation of the T/L shall be deemed to be included in the Price Schedules.
- The applicable standards/specifications along with their amendments placed in Volume-II are to be read carefully before filling up the schedule of prices.
- Mandatory Spare parts will be transported to NTDC warehouse Gatti (Faisalabad) directly from the port.
- Specify currencies in accordance with ITB 19.1 of the BDS. Create additional columns for foreign currencies if so required.

Signature of Bidder _____

500 kV Double Circuit Quad Bundle Transmissions line for:							
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)							
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)							
SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY							
Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
I	500kV Transmission Line						
A	Steel Towers						
1	Furnish 500kV double circuit towers DS1, DA1, DD1 & TDT alongwith accessories including anti-theft bolts, anti-climbing devices, number plates, danger signs, phase plates, aerial marker plates and Bird Guards (See Note-1&2) and in accordance with requirements of Technical Provisions/Specifications & Drawings.						
	(a) Tower Type "DS1"						
	(i) Basic Tower Body	No.	592				
	(ii) 2.0 m Single Leg Extension	No.	164				
	(iii) 4.0 m Single Leg Extension	No.	528				
	(iv) 6.0 m Single Leg Extension	No.	916				
	(v) 8.0 m Single Leg Extension	No.	760				
	(vi) 6.0 m Body Extension	No.	58				
	(vii) Stubs	No.	2,368				
	(b) Tower Type "DA1"						
	(i) Basic Tower Body	No.	205				
	(ii) 2.0 m Single Leg Extension	No.	40				
	(iii) 4.0 m Single Leg Extension	No.	148				
	(iv) 6.0 m Single Leg Extension	No.	184				
	(v) 8.0 m Single Leg Extension	No.	448				
	(vi) 6.0 m Body Extension	No.	65				
	(vii) Stubs	No.	820				
	(c) Tower Type "DD1"						
	(i) Basic Tower Body	No.	108				
	(ii) 2.0 m Single Leg Extension	No.	32				
	(iii) 4.0 m Single Leg Extension	No.	96				
	(iv) 6.0 m Single Leg Extension	No.	108				
	(v) 8.0 m Single Leg Extension	No.	196				
	(vi) 6.0 m Body Extension	No.	31				
	(vii) Stubs	No.	432				
	(d) Tower Type "TDT"						
	(i) Basic Tower Body	No.	5				
	(ii) 8.0 m Single Leg Extension	No.	20				
	(iii) Stubs	No.	20				
2	Supply of additional weight of steel members/plates, corresponding to the increased weight arising from upgraded member or plate sizes necessitated by the installation of bird flight diverters, as determined from the engineering works described in Schedule No 3, Item No. 1. (For Bird Diverters Portion Only)	Metric Ton	3				
Sub-Total A :							
B	Conductor and OPGW (With Associated Equipment)						
1	Furnish 795 KCM ACSR "Drake" Conductor	km	7,280				
2	Furnish						
	(a) OPGW with at least 24 fibers	km	640				
	(b) Joint boxes for OPGW						
	(i) OPGW-OPGW (A Type)	No.	150				
	(ii) OPGW-OPGW Cable (B Type)	No.	10				
	(iii) OPGW-attaching Clamps	No.	9,600				
	(c) Test Equipment, Installation and Maintenance Tools						
	- Fiber Optic Talk Set (Set comprised two units)	Set	2				
	- Fiber Optic Tool Kit	Set	2				
	- OTDR with range ≥ 400km Yokogawa AQ7260 or equivalent	Set	2				
Sub Total B							
C	Insulator Hardware Assemblies (Complete Hardware Strings for Quad Bundle ACSR Drake Conductor)						
1	Furnish Single 'V' String Suspension Assemblies type "VS(4)" including 29x2 Nos.160 kN E&M Strength Insulators (Porcelain or Glass)" for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E001	Set	1,620				
1(a)	Furnish Single 'V' String Suspension Assemblies type "VS(4)" including 29x2 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)" for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E001	Set	1,932				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY

Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
2	Furnish Single 'V' String Suspension Assemblies type "VJ(4)" including 36x2 Nos. 80 kN E&M Strength Insulators (Porcelain or Glass)* for double circuit tower type 'DA1' & 'DD1' as per specification drawing No. 4029/169/401C/TD/01E002	Set	1,002				
2(a)	Furnish Single 'V' String Suspension Assemblies type "VJ(4)" including 36x2 Nos. Pre-RTV Coated 80 kN E&M Strength Insulators (Porcelain or Glass)* for double circuit tower type 'DA1' & 'DD1' as per specification drawing No. 4029/169/401C/TD/01E002	Set	876				
3	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower types 'DA1' & 'DD1' including 29x4 Nos. 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005	Set	2,004				
3(a)	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower types 'DA1' & 'DD1' including 29x4 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005	Set	1,752				
4	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower type 'TDT' including 29x4 Nos. 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005a	Set	16				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY

Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
4(a)	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower type "TDT" including 29x4 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005a	Set	24				
5	Furnish Single string Transposition Assembly Upright type "TDTU(4)" including 36 Nos. 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E006	Set	8				
5(a)	Furnish Single string Transposition Assembly Upright type "TDTU(4)" including 36 Nos. Pre-RTV Coated 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E006	Set	12				
6	Furnish Single string Transposition Assembly Inverted type "TDTI(4)" including 36 Nos. 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E007	Set	8				
6(a)	Furnish Single string Transposition Assembly Inverted type "TDTI(4)" including 36 Nos. Pre-RTV Coated 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E007	Set	12				
7	Furnish Quad string special dead end assemblies type "SDE(4)" including 29x4 Nos. 160kN E&M strength insulators for tower type "TDT" as per specification drawing No. 4029/169/401C/TD/01E008 (extension link of 3.5m in length)	Set	8				
7(a)	Furnish Quad string special dead end assemblies type "SDE(4)" including 29x4 Nos. Pre-RTV Coated 160kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" as per specification drawing No. 4029/169/401C/TD/01E008 (extension link of 3.5m in length)	Set	12				
8	Furnish Pipe Jumper Assembly type "VJT(4)" including 54x4 Nos. 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including jumper spacers & special jumper spacers as per specification drawing No. 4029/169/401C/TD/01E009	Set	8				
8(a)	Furnish Pipe Jumper Assembly type "VJT(4)" including 54x4 Nos. Pre-RTV Coated 80kN E&M strength insulators (Porcelain or Glass)* for tower type "TDT" including jumper spacers & special jumper spacers as per specification drawing No. 4029/169/401C/TD/01E009	Set	12				
9	Furnish Special Tension Clamp for tower type "TDT" as per specification drawing No. 43.55.67.295P	Set	80				
10	Furnish Jumper Compression Dead End Clamp for tower type "TDT" as per specification drawing No. 50.57.84.05P	Set	320				
11	Furnish Straight Compression Dead End Clamp for tower type "TDT" as per specification drawing No. 50.77.84.05	Set	80				
12	Furnish Double String Dead End Assemblies for quad bundle "DSD1(4)" including 29x2 Nos. 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E010	Set	12				
12(a)	Furnish Double String Dead End Assemblies for quad bundle "DSD1(4)" including 29x2 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E010	Set	6				
13	Furnish Double String Dead End Assemblies for quad bundle "DSD2(4)" including 29x2 Nos. 160 kN E&M Strength Insulators (Porcelain or Glass)* for Gantry side on Gantry span as per specification drawing No. 4029/169/401C/TD/01E011	Set	12				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY

Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
13(a)	Furnish Double String Dead End Assemblies for quad bundle "DSD2(4)" including 29x2 Nos. Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)* for Gantry side on Gantry span as per specification drawing No. 4029/169/401C/TD/01E011	Set	6				
14	Submit Finite Element (FEM) Simulation for Electric Field (Potential) Distribution of Insulator Hardware Assemblies (items C1 - C8(a) and C12 - 13(a)) with Coulomb or ElecNET software.	Lumpsum	1				
Sub-Total C :							
D	Hardware for OPGW						
1	Furnish Suspension Assembly for OPGW including AGS clamp for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E012	Set	1,184				
2	Furnish Double Tension Set for jointing of OPGW on suspension tower as per specification drawing No. 4029/169/401C/TD/01E013	Set	128				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY

Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
3	Furnish Double Tension Set for jointing / non jointing of OPGW on tension towers as per specification drawing No. 4029/169/401C/TD/01E014	Set	636				
Sub-Total D :							
E	Accessories and Dampers						
1	Furnish Conductor Compression Splice (pre-filled with appropriate filler compound) for 795 kcmil ACSR "Drake" Conductor.	No.	2,500				
2	Furnish Conductor Repair Sleeve for 795 KCM ACSR "Drake" Conductor.	No.	1,000				
3	Furnish Conductor Dead-End Compression Body (pre-filled with appropriate filler compound) including jumpers dead end terminal pads for 795 kcmil ACSR "Drake" Conductor.	No.	15,408				
4	Furnish Spacer Damper for 795 KCM ACSR "Drake" Conductor.	No.	40,392				
5	Furnish Stockbridge Vibration Dampers for 795 kcmil ACSR "Drake" Conductor (See Note-4)	No.	10,920				
6	Furnish stock bridge vibration dampers for OPGW.	No.	4,912				
Sub-Total E :							
F	Grounding Material						
1	Furnish 16 mm diameter 3.0 m long copper covered ground rods.	No.	1,820				
2	Furnish flat to cable connector.	No.	1,820				
3	Furnish cable to rod connector.	No.	1,820				
4	Furnish 7 No. 10 copper covered ground wire.	Meter	5,460				
Sub-Total F :							
G	Mandatory Spare Parts						
1	Steel Towers						
	Furnish 500kV double circuit towers DS1, DA1, DD1 & TDT alongwith accessories including anti-theft bolts, anti-climbing devices, number plates, danger signs, phase plates, aerial marker plates and Bird Guards (See Note-1&2) and in accordance with requirements of Technical Provisions/Specifications & Drawings.						
	(a) Tower Type "DS1"						
	(i) Basic Tower Body	No.	30				
	(ii) 2.0 m Single Leg Extension	No.	8				
	(iii) 4.0 m Single Leg Extension	No.	24				
	(iv) 6.0 m Single Leg Extension	No.	48				
	(v) 8.0 m Single Leg Extension	No.	40				
	(vi) 6.0 m Body Extension	No.	5				
	(vii) Stubs	No.	120				
	(b) Tower Type "DA1"						
	(i) Basic Tower Body	No.	20				
	(ii) 2.0 m Single Leg Extension	No.	4				
	(iii) 4.0 m Single Leg Extension	No.	12				
	(iv) 6.0 m Single Leg Extension	No.	20				
	(v) 8.0 m Single Leg Extension	No.	44				
	(vi) 6.0 m Body Extension	No.	7				
	(vii) Stubs	No.	80				
	(c) Tower Type "DD1"						
	(i) Basic Tower Body	No.	10				
	(ii) 2.0 m Single Leg Extension	No.	4				
	(iii) 4.0 m Single Leg Extension	No.	8				
	(iv) 6.0 m Single Leg Extension	No.	12				
	(v) 8.0 m Single Leg Extension	No.	16				
	(vi) 6.0 m Body Extension	No.	4				
	(vii) Stubs	No.	40				
	(d) Tower Type "TDT"						
	(i) Basic Tower Body	No.	2				
	(ii) 8.0 m Single Leg Extension	No.	8				
	(iii) Stubs	No.	8				
	Conductor and OPGW (With Associated Equipment)						
2	Furnish 795 KCM ACSR "Drake" Conductor	km	320				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY

Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
3	Furnish						
	(a) OPGW with at least 24 fibers	km	65				
	(b) Joint boxes for OPGW						
	(i) OPGW-OPGW (A Type)	No.	15				
	(ii) OPGW-OPGW Cable (B Type)	No.	2				
	(iii) OPGW-attaching Clamps	No.	960				
	(c) Test Equipment, Installation and Maintenance Tools						
	- Fiber Optic Talk Set (Set comprised two units)	Set	-				
	- Fiber Optic Tool Kit	Set	-				
	- OTDR with range ≥ 400km Yokogawa AQ7260 or equivalent	Set	-				
	Insulator Hardware Assemblies (Complete Hardware Strings for Quad Bundle ACSR Drake Conductor)						
4	Furnish Single 'V' String Suspension Assemblies type "VS(4)" excluding Insulators for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E001	Set	180				
5	Furnish Single 'V' String Suspension Assemblies type "VJ(4)" excluding Insulators for double circuit tower type 'DA1' & 'DD1' as per specification drawing No. 4029/169/401C/TD/01E002	Set	180				
6	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower types 'DA1' & 'DD1' excluding Insulators as per specification drawing No. 4029/169/401C/TD/01E005	Set	360				
7	Furnish Quad String Dead End Assemblies for quad bundle type "DE(4)" for double circuit tower type 'TDT' excluding Insulators (Porcelain or Glass)* as per specification drawing No. 4029/169/401C/TD/01E005a	Set	16				
8	Furnish Single string Transposition Assembly Upright type "TDTU(4)" excluding Insulators for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E006	Set	8				
9	Furnish Single string Transposition Assembly Inverted type "TDTI(4)" excluding Insulators for tower type "TDT" including dead end clamp & Jumper Terminal as per specification drawing No. 4029/169/401C/TD/01E007	Set	8				
10	Furnish Quad string special dead end assemblies type "SDE(4)" excluding Insulators for tower type "TDT" as per specification drawing No. 4029/169/401C/TD/01E008 (extension link of 3.5m in length)	Set	8				
11	Furnish Pipe Jumper Assembly type "VJT(4)" excluding Insulators for tower type "TDT" including jumper spacers & special jumper spacers as per specification drawing No. 4029/169/401C/TD/01E009	Set	8				
12	Furnish Special Tension Clamp for tower type "TDT" as per specification drawing No. 43.55.67.295P	Set	32				
13	Furnish Jumper Compression Dead End Clamp for tower type "TDT" as per specification drawing No. 50.57.84.05P	Set	128				
14	Furnish Straight Compression Dead End Clamp for tower type "TDT" as per specification drawing No. 50.77.84.05	Set	32				
15	Furnish Double String Dead End Assemblies for quad bundle "DSD1(4)" excluding Insulators as per specification drawing No. 4029/169/401C/TD/01E010	Set	6				
16	Furnish Double String Dead End Assemblies for quad bundle "DSD2(4)" excluding Insulators for Gantry side on Gantry span as per specification drawing No. 4029/169/401C/TD/01E011	Set	6				
	Insulators						
17	Pre-RTV Coated 160 kN E&M Strength Insulators (Porcelain or Glass)*	Nos.	27,840				
18	Pre-RTV Coated 80 kN E&M Strength Insulators (Porcelain or Glass)*	Nos.	7,632				
19	160 kN E&M Strength Insulators (Porcelain or Glass)* - uncoated	Nos.	27,840				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY

Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
20	80 kN E&M Strength Insulators (Porcelain or Glass)* - uncoated	Nos.	7,632				
	Hardware for OPGW						
21	Furnish Suspension Assembly for OPGW including AGS clamp for double circuit tower type 'DS1' as per specification drawing No. 4029/169/401C/TD/01E012	Set	60				
22	Furnish Double Tension Set for jointing of OPGW on suspension tower as per specification drawing No. 4029/169/401C/TD/01E013	Set	6				
23	Furnish Double Tension Set for jointing / non jointing of OPGW on tension towers as per specification drawing No. 4029/169/401C/TD/01E014	Set	64				
	Accessories and Dampers						
24	Furnish Conductor Compression Splice (pre-filled with appropriate filler compound) for 795 kcmil ACSR "Drake" Conductor.	No.	250				
25	Furnish Conductor Repair Sleeve for 795 KCM ACSR "Drake" Conductor.	No.	100				
26	Furnish Conductor Dead-End Compression Body (pre-filled with appropriate filler compound) including jumpers dead end terminal pads for 795 kcmil ACSR "Drake" Conductor.	No.	32,088				
27	Furnish Spacer Damper for 795 KCM ACSR "Drake" Conductor.	No.	3,000				
28	Furnish Stockbridge Vibration Dampers for 795 kcmil ACSR "Drake" Conductor	No.	744				
29	Furnish stock bridge vibration dampers for OPGW.	No.	376				
30	60 ton hydraulic compressor	No.	3				
31	100 ton hydraulic compressor	No.	3				
32	Compression dies for "Drake" conductor	No.	6				
33	Filler Compound, a carton of 100, 0.4536 kg tubes	Carton	3				
34	Electrical Joint compound, a carton of 100, 0.23 kg tubes.	Carton	3				
	Grounding Material						
35	Furnish 16 mm diameter 3.0 m long copper covered ground rods.	No.	124				
36	Furnish flat to cable connector.	No.	124				
37	Furnish cable to rod connector.	No.	124				
38	Furnish 7 No. 10 copper covered ground wire.	Meter	372				
	Transmission Line Condition Monitoring & Preventive Maintenance Systems and Tools & Plant						
39	Aerialtronics Aerial drone Altura Zenith (1.3.0) RTF - T3A Combo with Pensar for transmission line construction supervision and inspection which should be 500kV EMC certified; ferromagnetic interference protected; water, thermal and shock resistant; wide remote control range (3km radius or higher) and atleast 150 meter (elevation from ground) flying range with the payload capacity of atleast 3 kg along-with a compatible high-definition (1080p or higher) high-quality gyro-stabilized camera with the additional capability of detecting thermal hot-spots (thermal vision) along-with run-time camera output display to the pilot at ground and video recording. The drones shall include Photogrammetry software upgrade along with three (03) spare batteries and a battery flight case. A pilot (operator) training program (to atleast 06 persons) for the supplied drone devices is also included in this scope.	No.	3				
40	Ofil Systems DayCor® Lumina ^{HD} hand-held corona camera complete with all accessories including close-up lenses, CoronaWise reporting software, remote control, temperature and humidity meter, flight table, spare batteries and carrying case.	No.	3				
41	FLIR T660 15° (Wi Fi) hand-held thermography camera complete will all accessories including memory card, extra batteries, battery charger, nylon pouch, hard transport case.	No.	3				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY

Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
42	Bushnell 15X56MM FORGE Binoculars with complete accessories and carrying case.	No.	10				
43	Bosch GLM400CL BLAZE™ Outdoor 400 Ft. Connected Lithium-Ion Laser Measure with Camera complete with all accessories including Micro USB Cable, Battery Charger, Hand Strap, Pouch and spare batteries.	No.	3				
44	BLUE STRIPE® USTS-050-MM Measuring Stick.	No.	5				
45	Wave Control SMP2 Field Strength Meter for EMF exposure with WP400 Probe including Field Meter PC Software, battery charger, carrying case with all necessary accessories.	No.	3				
46	Oregon 750 - hand held GPS	No.	4				
47	GPS Map64S - hand held GPS	No.	3				
48	Parachute Harness a) Parachute harness complete (D-D = 22 inch) b) Complete with Seat, Chest, Leg Straps and Shoulder pads etc. c) Pole Strap (Positioning Strap) Length 1.7 - 1.8 meter d) Lanyard with shock absorber, Length 1.5 meter (Medium and Large size)	Set	10				
49	Aluminum Cable Car for Spacer Damper Installation (for Quad Bundle Conductor)	No.	4				
50	Capstan Hoist (1 ton) with allied accessories and tower fitting assembly	No.	4				
51	Chain Hoist (3 ton)	No.	4				
52	Chain Hoist (6 ton)	No.	6				
53	Chicago Conductor Grip for ACSR Drake	No.	24				
54	Cradle for 500kV Transmission Line Towers O&M (12ft x 1-1/4 inches)	Set	3				
55	Earthing Lead flexible 20mm, (6/8 inches) x 18 ft long with tower & conductor clamps up to 32mm to 38mm jaws	Set	3				
56	Electric Bolt Cutter (upto 1.5 inch dia)	No.	3				
57	Hydraulic Conductor Cutter (upto 1.5 inch dia)	No.	3				
58	Karabiners 500lbs and 1000 lbs	No.	6				
59	Pully Block Three way (6 ton)	No.	3				
60	Pully Block Two way (6 ton)	No.	3				
61	Pully Block Single way 6 inch (6 ton)	No.	3				
62	Ratchet Hoist 3 ton	Set	3				
63	Torque Wrench (50 - 250ft-lbs)	No.	4				
64	Stocking Joints for ACSR Drake Conductor	No.	6				
Sub-Total G :							
	Total of Item A						
	Total of Item B						
	Total of Item C						
	Total of Item D						
	Total of Item E						
	Total of Item F						
	Total of Item G						
Total of Schedule No. 2, column 7 to be carried to Schedule No.5 (Grand Summary)							

* The Bidder shall specify the type of insulator being offered.

Notes:

- Reference drawings for Bird Guards, along with the installation list/BoQ for tower type TDT, are provided in Volume-III. The Contractor/Manufacturer shall be responsible for calculating and preparing the installation lists/BoQs/drawings of Bird Guards for tower types DS1, DA1, and DD1, following the same pattern, and shall include the cost in their quoted prices. Bird Guards shall be provided for all tower types accordingly.
- The tower drawings provided in Volume-III indicate normal bolts, which are for indicative purposes only. Anti-theft bolts shall be used for towers.
- For Item No. I(A)(2): No additional payment shall be made for any change in steel grade. The bidder shall make its own assessment and include such costs in the tower prices. Only the cost corresponding to the difference in weight — i.e., the weight of the upgraded member size minus the weight of the original member size specified in the provided drawings — shall be covered under this item. Please note that no additional payment shall be admissible for any increase in weight, except in cases arising from the installation of bird flight diverters.

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.2 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM WITHIN THE EMPLOYER'S COUNTRY

Item No.	Description	Unit	Qty	Unit Price (PKR)		Total Price (PKR)	Sales & Other Taxes & Duties (PKR)
				Ex-Works	Inland Transportation & Insurance (EXW to Site Ghazi Barotha / Faisalabad / Islamabad)	Local Currency	
1	2	3	4	5	6	7=4x(5+6)	8
4	The requirement and quantity of Stockbridge vibration dampers for ACSR 'Drake' conductor, whether for all spans or specific span lengths, shall be determined by the contractor/manufacturer/supplier based on an analytical damping study.						
5	The quantities specified in Price Schedule No. 1 are final, except for Item Nos. I(A)(2) and E(5). For these two items, the Contractor shall place orders to manufacturers after completion of detailed engineering. Payment for these two items shall be made as per actual supplied quantities.						
6	The contractor shall transport, unload and stack leftover/additional material from site to NGC designated Warehouse/Store at its own cost.						
7	The bidder shall be responsible to furnish the tower material, OPGW, conductor, insulators, accessories, dampers & hardware for conductor and OPGW, for completion of line in all respect. Contractor will reconcile the material after completion and the left-over/spare material will be handed-over/shifted to the Employer's designated store.						
8	Price of any other item, either covered or not in the Price Schedules but is required for the completion, commissioning and successful operation of the T/L shall be deemed to be included in the Price Schedules.						
9	The applicable standards/specifications along with their amendments placed in Volume-II are to be read carefully before filling up the schedule of prices.						
10	Mandatory Spare parts will be transported to NTDC warehouse Gatti (Faisalabad) directly from the port.						
11	Column 5 EXW Price shall include all customs duties and sales and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of the item or the customs duties and sales and other taxes already paid on previously imported items.						
				Name of Bidder _____			
				Signature of Bidder _____			

500 kV Double Circuit Quad Bundle Transmissions line for:							
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)							
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)							
SCHEDULE NO. 3 - DESIGN SERVICES							
Item	Description	Unit	Quantity	Unit Price		Total Price	
				Local Currency Portion	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6	7 = 4 x 5	8 = 4 x 6
1	Development/preparation of detailed 3D tower models using PLS-Tower software accurately replicating the existing erection/structural drawings; performing loading calculations for actual spans including the effects of bird flight diverters; conducting stress analysis of the PLS-Tower models using actual loads including bird flight diverters; modifying or upgrading steel grades or member/plate sizes (if required), without altering the overall tower outline; preparing updated structural drawings, bill of materials, fabrication drawings, and drawings for tower accessories; and carrying out prototype assembly — all in accordance with the specifications. (Engineering works only). In case of increase in size of any brace/member of tower, payment of the difference of weight (i.e., the weight of the upgraded member size minus the weight of the original member size specified in the provided drawings) will be made as per item I(A)(2) of Schedule 1 or 2.						
	(i) 500kV Double Circuit Quad Bundle Suspension Tower Type DS1 (with all combinations of Tower)	No.	1				
	(ii) 500kV Double Circuit Quad Bundle Suspension Tower Type DA1 (with all combinations of Tower)	No.	1				
	(iii) 500kV Double Circuit Quad Bundle Suspension Tower Type DD1 (with all combinations of Tower)	No.	1				
2	Field Vibration study to measure performance of damping system installed for conductor & OPGW.	No.	1				
3	Design of foundations (detailed drawings with design calculations, model files etc.) for towers with chimney extension (beyond 0.45m above NSL) upto 4m height above NSL as mentioned in Schedule 4, D-foundations, (a) (ix), (b) (ix), (c) (ix), and (d) (vi)	No.	1				
4	Slope Stability analysis at tower locations using GEOSTUDIO, SLOPE/W, PLAXIS 3D or any other suitable geotechnical software approved by the Engineer, including geotechnical assessment, stability analysis, slope protection design (e.g., retaining structures, drainage systems, erosion control), preparation of detailed design drawings, design calculations, and construction notes, complete in all respects	No.	1				
Total of Schedule No. 3, Column 7 and 8 to be carried to Schedule No.5 (Grand Summary)							
<div> <div>Note:</div> <div>Specify Unit of Foreign Currency</div> </div> <div> <div>Name of Bidder</div> <div>Signature of Bidder</div> </div>							

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.4 - INSTALLATION AND OTHER SERVICES

TOTAL OF INSTALLATION AND OTHER SERVICES (INCLUSIVE OF TRANSPORTATION / INSURANCES AND OTHER INCIDENTAL COSTS)

Item No.	Description	Unit	Qty	Unit Price (PKR)	Total Price (PKR) Including all Custom duties, taxes and other levies etc. as per ITB 18.4 w/o Provincial Sales Tax	Provincial Sales tax (PST) in PKR	Total Price including PST in PKR
1	2	3	4	5	6=4*5	7	8= 6+7
(i)	INSTALLATION (INCLUSIVE OF TRANSPORTATION / INSURANCES AND OTHER INCIDENTAL COSTS)						
A	Survey						
1	Clearing Right of Way (ROW)	Lump Sum	1				
2	Check Survey and Validation of already established centre line prior to foundation construction and preparation of as-built plan & profile drawings of the already prepared plan & profile drawings using PLS-CADD and construction structure lists (provided in Volume-III) of the constructed transmission line after incorporating all the changes and submitted to the Project Manager. In case of route diversion, payment of the diverted portion will be made as per item A.3	km	292				
3	Route alignment and detailed surveying of diverted portion not limited to chainage and leveling, preparation of plan & profile drawings, spotting of towers and preparation of construction structure list & Latitude & Longitude with hand held GPS of each tower location	km	30				
	Sub-Total A:						
B	Development of Transposition Scheme and Amendments in Plan & Profile/Tower Spotting:						
1	Development of a suitable transposition scheme and incorporation of necessary amendments in the transmission line's Plan & Profile, including tower spotting modifications, taking into account the end-to-end lengths of both circuits. The scope also includes ensuring proper phase sequence alignment at the terminal substations, simulation and validation using PSSSE/PSCAD/EMTP and other relevant power system analysis tools, and quantification and detailed analysis of zero and negative sequence current imbalances under various system operating conditions.	Lump Sum	1				
	Sub-Total B:						
C	Sub-soil Investigations:						
	Confirmatory sub-soil Investigation in varied soil/boulder/rock (including laboratory tests) as per Specifications (Technical Provisions for Construction Clause 10.2) and submission of Sub-Soil Investigation Report.						
(a)	From NSL to depth of 15 m	Lin. Mtr.	210				
(b)	From 15 m to depth of 25 m	Lin. Mtr.	40				
(c)	From 25 m to depth of 40 m	Lin. Mtr.	100				
(d)	Test pit upto depth of 3m	Lin. Mtr.	150				
(e)	Hand Auger upto depth of 10m	Lin. Mtr.	150				
	Sub-Total C:						
D	Foundations						
	Reinforced Concrete Spread Foundations (4 legs) complete in all respect in varied soil as well as boulders/rock complete with supply of materials including alignment, peg marking, access, preparatory works, excavation, blasting, leveling, grading of tower site, cutting, dewatering, shuttering, reinforcement, concreting (using Sulphate Resistance Cement conforming to ASTM C-150 Type-V), lean concrete (if required), curing, backfilling of foundations after concreting with excavated/borrowed earth (irrespective of lead), application of three (03) quotes hot bitumen (ExpanProof 10 –Fospak bitumen and compaction of backfill material in layers, stub setting and site restoration etc. including tower staking (Latitude & Longitude with hand held GPS of each tower location should also be reported) and installation of stubs & tower grounding for tower type as per drawings and specifications:						
(a)	DS1 (Complete Foundation 4 Legs) as per Drawing No. 4029/169/TLC-22/TD/01G010						
	(i) Foundation Type D1 (Dry)	Foundation	45				
	(ii) Foundation Type D2 (Dry)	Foundation	115				
	(iii) Foundation Type D3 (Dry)	Foundation	199				
	(iv) Foundation Type D4 (Dry)	Foundation	30				
	(v) Foundation Type S (Semi-Submerged)	Foundation	15				
	(vi) Foundation Type W (Submerged)	Foundation	15				
	(vii) Foundation Type W1 (Submerged)	Foundation	5				
	(viii) Foundation Type W2 (Submerged)	Foundation	4				
	(ix) Design and Construction of Tower Foundation with Chimney extension (beyond 0.45m above NSL) upto 4m above NSL.	Foundation	1				
(b)	DA1 (Complete Foundation 4 Legs) as per Drawing No. 4029/169/TLC-22/TD/01G011						
	(i) Foundation Type D1 (Dry)	Foundation	16				
	(ii) Foundation Type D2 (Dry)	Foundation	34				
	(iii) Foundation Type D3 (Dry)	Foundation	51				
	(iv) Foundation Type D4 (Dry)	Foundation	11				
	(v) Foundation Type S (Semi-Submerged)	Foundation	7				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.4 - INSTALLATION AND OTHER SERVICES

TOTAL OF INSTALLATION AND OTHER SERVICES (INCLUSIVE OF TRANSPORTATION / INSURANCES AND OTHER INCIDENTAL COSTS)

Item No.	Description	Unit	Qty	Unit Price (PKR)	Total Price (PKR) Including all Custom duties, taxes and other levies etc. as per ITB 18.4 w/o Provincial Sales Tax	Provincial Sales tax (PST) in PKR	Total Price including PST in PKR
1	2	3	4	5	6=4*5	7	8= 6+7
	(vi) Foundation Type W (Submerged)	Foundation	7				
	(vii) Foundation Type W1 (Submerged)	Foundation	3				
	(viii) Foundation Type W2 (Submerged)	Foundation	3				
	(ix) Design and Construction of Tower Foundation with Chimney extension (beyond 0.45m above NSL) upto 4m above NSL.	Foundation	1				
	(c) DD1 (Complete Foundation 4 Legs) as per Drawing No. 4029/169/TLC-22/TD/01G012						
	(i) Foundation Type D1 (Dry)	Foundation	9				
	(ii) Foundation Type D2 (Dry)	Foundation	13				
	(iii) Foundation Type D3 (Dry)	Foundation	22				
	(iv) Foundation Type D4 (Dry)	Foundation	7				
	(v) Foundation Type S (Semi-Submerged)	Foundation	5				
	(vi) Foundation Type W (Submerged)	Foundation	5				
	(vii) Foundation Type W1 (Submerged)	Foundation	2				
	(viii) Foundation Type W2 (Submerged)	Foundation	2				
	(ix) Design and Construction of Tower Foundation with Chimney extension (beyond 0.45m above NSL) upto 4m above NSL.	Foundation	1				
	(d) TDT (Complete Foundation 4 Legs) as per Drawing No. 4029/169/TLC-22/TD/01G020						
	(i) Foundation Type D1 (Dry)	Foundation	1				
	(ii) Foundation Type D2 (Dry)	Foundation	1				
	(iii) Foundation Type D3 (Dry)	Foundation	1				
	(iv) Foundation Type D4 (Dry)	Foundation	1				
	(v) Foundation Type S (Semi-Submerged)	Foundation	1				
	(vi) Design and Construction of Tower Foundation with Chimney extension (beyond 0.45m above NSL) upto 4m above NSL.	Foundation	1				
	(e) Civil works for slope stability measures including excavation, retaining structures (e.g. gabion walls, RCC retaining walls), earth/rock backfilling, compaction, drainage arrangements (e.g. weep holes, surface channels), and any ancillary works necessary for ensuring slope stability at tower foundations, complete in all respect as per drawing, specifications and instructions of Engineer.	Foundation	25				
	Sub-Total D:						
E	Reinforced concrete pile foundations (cast in situ installation) complete in all type of soil as well as boulders/gravels/rock with supply of materials including excavation, drilling/boring, shuttering, reinforcement, concreting, bitumen coating, backfilling, installation of stubs, tower grounding, site clearing etc. using Sulphate Resistance Cement conforming to ASTM C150 Type-V shall be used including tower staking (Latitude & Longitude with RTK/hand held GPS of each tower location should also be reported) and installation of stubs & tower grounding for tower type:						
	(a) Reinforced concrete pile caps for tower types:						
	(i) DS1 (DWG No.4029/169/TLC-22/TD/01G014)	Foundation	163				
	(ii) DA1 (DWG No.4029/169/TLC-22/TD/01G015)	Foundation	64				
	(iii) DD1 (DWG No.4029/169/TLC-22/TD/01G016)	Foundation	36				
	(iv) TDT (DWG No. NTDC/DESIGN/500kV/107)	Foundation	1				
	(b) Reinforced concrete piles (cast in situ installation) for tower types:						
	(i) DS1 upto depth of 25m	Lin.mtr	16300				
	(ii) DA1 upto depth of 30m	Lin.mtr	7680				
	(iii) DD1 upto depth of 30m	Lin.mtr	4320				
	(iv) TDT upto depth of 30m	Lin.mtr	120				
	Reinforced concrete Single pile per footing with tie beam arrangement (cast in situ installation) complete for all types of soil/rock/boulder with supply of materials as per specification drawing No. 3217/169/TD/01G109 tower staking, stub setting including installation of tower stubs etc. complete.						
	(i) Reinforced concrete pile caps with tie beam	Foundation	8				
	(ii) Reinforced concrete pile (cast in situ) installation 1200 mm dia pile with depth to 20m	Lin.mtr	640				
	(iii) Reinforced concrete pile (cast in situ) installation 1200 mm dia pile with depth 20m to 30m	Lin.mtr	320				
	(iv) Reinforced concrete pile (cast in situ) installation 1200 mm dia pile with depth 30m to 40m	Lin.mtr	320				

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.4 - INSTALLATION AND OTHER SERVICES

TOTAL OF INSTALLATION AND OTHER SERVICES (INCLUSIVE OF TRANSPORTATION / INSURANCES AND OTHER INCIDENTAL COSTS)

Item No.	Description	Unit	Qty	Unit Price (PKR)	Total Price (PKR) Including all Custom duties, taxes and other levies etc. as per ITB 18.4 w/o Provincial Sales Tax	Provincial Sales tax (PST) in PKR	Total Price including PST in PKR
1	2	3	4	5	6=4*5	7	8= 6+7
	Reinforced concrete Single pile per footing with tie beam arrangement (cast in situ installation) complete for all types of soil/rock/boulder with supply of materials as per specification drawing no. 4029/169/TLC-22/TD/01G017 tower staking, stub setting including installation of tower stubs etc. complete.						
	(i) Reinforced concrete pile caps with tie beam	Foundation	6				
	(ii) Reinforced concrete pile (cast in situ) installation 1500 mm dia pile with depth to 20m	Lin.mtr	480				
	(iii) Reinforced concrete pile (cast in situ) installation 1500 mm dia pile with depth 20m to 30m	Lin.mtr	240				
	(iv) Reinforced concrete pile (cast in situ) installation 1500 mm dia pile with depth 30m to 35m	Lin.mtr	120				
	Reinforced concrete Double pile per footing with tie beam arrangement (cast in situ installation) complete for all types of soil/rock/boulder with supply of materials as per specification drawing No. 3217/169/TD/01G111 tower staking, stub setting including installation of tower stubs etc. complete.						
	(i) Reinforced concrete pile caps with tie beam	Foundation	4				
	(ii) Reinforced concrete pile (cast in situ) installation 1350 mm dia pile with depth to 20m	Lin.mtr	640				
	(iii) Reinforced concrete pile (cast in situ) installation 1350 mm dia pile with depth 20m to 30m	Lin.mtr	320				
	(iv) Reinforced concrete pile (cast in situ) installation 1350 mm dia pile with depth 30m to 35m	Lin.mtr	160				
	Pile load test in compression confirming to ASTM D1143 / D1143M and in uplift confirming to ASTM D3689 / D3689M at 2.5 times of tower foundation loads.						
	(i) DS1 (In Compression)	Foundation	1				
	(ii) DA1 (In Compression)	Foundation	1				
	(iii) DD1 (In Compression)	Foundation	1				
	(iv) TDT (In Compression)	Foundation	1				
	(v) DS1 (In Tension)	Foundation	1				
	(vi) DA1 (In Tension)	Foundation	1				
	(vii) DD1 (In Tension)	Foundation	1				
	(viii) TDT (In Tension)	Foundation	1				
	E-6 Sonic Integrity Test at pile foundation confirming to ASTM D5882	No.	32				
Sub-Total E:							
F	Erection of Steel Towers						
1	Transport and Install 500kV double circuit tower types 'DS1', 'DA1', 'DD1' & TDT with all accessories i.e anti climbing devices, aerial markers number plates, danger signs, phase plates, Bird Guards etc. in accordance with requirements of Bidding Documents.	Ton	31,750				
2	Welding of erected tower bolts & nuts after final inspection upto height of 8.0 m from top of foundation chimney as per specification drawing.	Each tower	100				
Sub-Total F:							
G	Dismantling of Towers (complete in all respect), Conductor & Ground Wire with Associated Equipment (From Tower No. 116 to 120 of existing Ghazi Barotha - Rawat T/Line)						
1	Dismantling of complete tower types DS1, DA1 & DD1 (without damaging any component), bundling/packing, loading, transporting, unloading & properly staking at NGC designated warehouse/store and all other associated work necessary for the completion of this phase of the work.	Ton	250				
2	Dismantling/Unclipping of existing/old Conductor from double circuit quad bundle T/Line along with all associated insulators, hardware & other accessories and Dismantling/Unclipping of existing/old Ground Wires from both peaks along with all associated hardware & other accessories.	km	2				
Sub-Total G:							
H	Stringing of Conductor and OPGW						
1	Transport & Install 795KCM ACSR Drake for quad conductor configuration insulator hanging, hardware assemblies, accessories & dampers etc. complete in all respects as per specifications & approved drawings and methodology.	km D/C Quad Bundle	292				
2	Transport & Install OPGW including installation of drop down lengths for joint boxes at the towers along with allied hardware material including hardware assemblies, joint boxes accessories, dampers etc. complete in all respects as per specifications & approved drawings.	km (on Both Peaks)	292				
3	Supply and Installation of bird flight diverters at the locations along TL route including Kala Chitta National Park, Chhingi National Park and Jhelum and Chenab River Crossings as proposed in the EIA report according to international best practices (10.6km). Indicative drawing of Bird Flight Diverter is attached in Volume-III.	No.	750				

500 kV Double Circuit Quad Bundle Transmissions line for:
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SCHEDULE NO.4 - INSTALLATION AND OTHER SERVICES

TOTAL OF INSTALLATION AND OTHER SERVICES (INCLUSIVE OF TRANSPORTATION / INSURANCES AND OTHER INCIDENTAL COSTS)

Item No.	Description	Unit	Qty	Unit Price (PKR)	Total Price (PKR) Including all Custom duties, taxes and other levies etc. as per ITB 18.4 w/o Provincial Sales Tax	Provincial Sales tax (PST) in PKR	Total Price including PST in PKR
1	2	3	4	5	6=4*5	7	8= 6+7
	Sub-Total H:						
I	Testing & Commissioning						
1	Testing and commissioning of the line	Lumpsum	1				
	Sub-Total I:						
J	ENVIRONMENTAL AND SOCIAL SAFEGUARDS						
1	Tree Plantation of the local species, including their maintenance for three years as proposed in EIA report. It should be done with consultation of the Employer, Forest Department and EPA.	No.	61,800				
2	Water quality monitoring / testing/analysis on quarterly basis for the whole project period at six locations along the TL route.	No.	54				
3	Air quality monitoring / testing on quarterly basis for the whole project period at six locations along the TL route.	No.	54				

500 kV Double Circuit Quad Bundle Transmissions line for: i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)							
SCHEDULE NO.4 - INSTALLATION AND OTHER SERVICES							
TOTAL OF INSTALLATION AND OTHER SERVICES (INCLUSIVE OF TRANSPORTATION / INSURANCES AND OTHER INCIDENTAL COSTS)							
Item No.	Description	Unit	Qty	Unit Price (PKR)	Total Price (PKR) Including all Custom duties, taxes and other levies etc. as per ITB 18.4 w/o Provincial Sales Tax	Provincial Sales tax (PST) in PKR	Total Price including PST in PKR
1	2	3	4	5	6=4*5	7	8= 6+7
4	Noise monitoring /analysis/measurement on quarterly basis for the whole project period at six locations along the TL route.	No.	54				
5	HSE tools like First Aid Kits, Personal Protective Equipment (PPE), Emergency and Safety Lights, Fire extinguishers, safety lights, etc.	Lumpsum	1				
6	Waste Management (waste segregation bins, Waste bins for medical waste, sharp containers, wheel barrows, waste disposal services etc.)	Lumpsum	1				
	Sub-Total J:						
K	Installation Services for Additional Work						
1	Grading/Cutting/Excavation (Dry Soil)	Cu. m.	8,000				
2	Excavation (semi-submerged soil)	Cu. m.	20				
3	Excavation (submerged soil)	Cu. m.	20				
4	Blasting/Cutting/Excavation/Grading (boulder/Rock)	Cu. m.	6,000				
5	Concrete (3000 psi at 28 days) furnished and installed	Cu. m.	2,000				
6	Reinforcing Bars furnished and installed (Grade-60)	kg	16,000				
7	Overhaul from Borrow and Compaction (regardless of the distance for borrow)	Cu. m.	2,000				
8	Lean concrete furnished and installed (2000 psi strength at 28 days)	Cu. m.	200				
9	Compacted crush+sand (50:50 ratio) installed under footings	Cu. m.	200				
10	Bitumen coating for footing	Sq. m	400				
11	Permanent mild steel casing having inner dia 1550mm with 10mm thickness	L.m	100				
12	Permanent mild steel casing having inner dia 1225mm with 10mm thickness	L.m	100				
13	Plain Cement Concrete (PCC) retaining wall /protection wall including excavation/blasting, concrete regardless of lead, shuttering, reinforcing rebars, compacted backfill with proper slope for surface drainage, application of bitumen coating on both sides of wall as per specification and drawing for PCC retaining/protection walls complete in all respect	Cu. m.	4,000				
14	Stone pitching with PCC mortar furnished and installed as per specifications & drawings.	Cu. m.	2,000				
15	Blasting/excavation and fixing/placement Stone box gabion (material+installation) complete in all respect as per Bidding Documents	Cu. m.	400				
16	Blasting/excavation, lean concrete, Stone masonry with PCC mortar, weep holes, PCC at top, backfill etc. furnished and installed as per specifications & drawing for retaining walls complete in all respect.	Cu. m.	6,000				
	Sub-Total K:						
	Total of Item A						
	Total of Item B						
	Total of Item C						
	Total of Item D						
	Total of Item E						
	Total of Item F						
	Total of Item G						
	Total of Item H						
	Total of Item I						
	Total of Item J						
	Total of Item K						
Total of Installation and other services, Schedule No. 4, Column No. 6, to be carried to Schedule No.5 (Grand Summary)							

Notes:

- The quantities given in Price Schedules are indicative/estimated quantities.
- Price of any other item specifically not covered in the Price Schedules but is required for the completion, commissioning and operation of the transmission line shall be deemed to be included in the Price Schedules.
- In case of failure by the bidder to fill the price of Sales Tax in relevant column, the quoted price of the bidder will be considered inclusive of Sales Tax applicable as per Tax and relevant provisions of the Bidding Documents. In case the bidder takes deviation or mention that prices are exclusive of PST, his bid shall be considered as non-responsive.
- Foundation means four legs of tower.

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO.4 - INSTALLATION AND OTHER SERVICES

TOTAL OF INSTALLATION AND OTHER SERVICES (INCLUSIVE OF TRANSPORTATION / INSURANCES AND OTHER INCIDENTAL COSTS)

Item No.	Description	Unit	Qty	Unit Price (PKR)	Total Price (PKR) Including all Custom duties, taxes and other levies etc. as per ITB 18.4 w/o Provincial Sales Tax	Provincial Sales tax (PST) in PKR	Total Price including PST in PKR
1	2	3	4	5	6=4*5	7	8= 6+7

- 5 An allowance of two percent (2%) of the total installed quantity will be permitted for sag, jumpers and wastage for the conductor, one percent (1%) for OPGW and two percent (2%) for lossage of nuts, bolts and washers (for towers only); and one percent (1%) for insulator breakage. These allowances are the maximum permissible and in case of wastage less than these limits all excess material shall be returned to NTDC storage yards by the Contractor. For quantities in excess of these limits, the Contractor shall replace or reimburse NTDC for the loss. All unused, above allowable limits of waste materials and packing wood are the property of NTDC and shall be returned to NTDC storage yards by the Contractor.

Name of Bidder _____
Signature of Bidder _____

500 kV Double Circuit Quad Bundle Transmissions line for: i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)			
<u>SCHEDULE NO. 5 - GRAND SUMMARY</u>			
Sr. No.	Description	Bid Prices	
		Foreign Currency Component	Local Currency Component (PKR)
1	Total Schedule No. 1 Plant and Mandatory Spare Parts Supplied from Abroad		-
2	Total Schedule No. 2 Plant and Mandatory Spare Parts Supplied from Within the Employer's Country	-	
3	Total Schedule No. 3 Design Services	-	-
4	Total Schedule No. 4 Installation and Other Services	-	
GRAND TOTAL to be carried forward to Letter of Bid			
Provisional Sums			
1	Payment of custom duties & taxes, by the Employer, reimbursement of health & safety measures provided in (SCC 22.2.7) and compensation for unavoidable damage to land (including permanently restricted land), crops, cutting of trees, any relocation/damage to any types of structures etc.		23,819,670,000
2	Payment of applicable Provincial Sales Tax on the Installation and Other Services (Schedule No. 4)		1,690,239,600
Not to be carried forward to Letter of Bid			

Name of Bidder _____

Signature of Bidder _____

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

500 kV Double Circuit Quad Bundle Transmissions line for:
i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

SCHEDULE NO. 6 - RECOMMENDED SPARE PARTS

Item	Description	Quantity	Unit Price		Total Price	
			Local Currency Portion	Foreign Currency Portion	Local Currency Portion	Foreign Currency Portion
1	2	3	4	5	6 = 3 x 4	7 = 3 x 5
	Not Applicable					

TOTAL

Name of Bidder _____

Signature of Bidder _____

Section 4 - Bidding Forms

This section contains the forms to be completed by the Bidder and submitted as part of its Bid.

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Letter of Technical Bid

The Bidder must accomplish the Letter of Technical Bid on its letterhead clearly showing the Bidder's complete name and address.

Date:

OCB No.:

Invitation for Bid No.:

To: *[insert complete name of the Employer]*

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We acknowledge that we have read and understand ADB's Anticorruption Policy (1998) and Investigation and Enforcement Framework, 2024, both as amended from time to time.
- (c) We offer to design, manufacture, test, deliver, install, pre-commission, and commission in conformity with the Bidding Document the following Plant and Services: *[insert narrative]*
- (d) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of *[insert bid validity period as specified in ITB 20.1 of the BDS]* days starts from the date fixed for the bid submission deadline in accordance with ITB 23.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (e) If our Bid is accepted, we commit to obtain performance security in accordance with the Bidding Document.
- (f) Our firm, including any Subcontractors or Manufacturers for any part of the Contract, has nationalities from eligible countries in accordance with ITB 4.2.
- (g) Our firm, Joint Venture partners, and Subcontractors or Suppliers, for any part of the contract, who are named in the Bid, do not have any conflict of interest in accordance with ITB 4.3.

If there is any conflict of interest, please state details:

- (i) Parties involved in the conflict of interest: _____
- (ii) Details about the conflict of interest: _____
- (h) We are not participating, as a Bidder, either individually or as partner in a Joint Venture, in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative offers submitted in accordance with ITB 13.
- (i) Our firm, Joint Venture partners, members of our respective management and supervisory boards of directors, proposed personnel, parent company, Subcontractors or Suppliers for any part of the contract who are named in the bid, consultants,

manufacturers, and service providers, are not subject to, or not controlled by any entity or individual that is subject to, a suspension or a debarment imposed by the Asian Development Bank or a debarment imposed by the Asian Development Bank in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the Asian Development Bank and other development banks.¹

- (j) We have checked all the parties mentioned in the declaration above against ADB's Publicly Disclosed Debarment of Suspension Subregister accessed via <https://sanctions.adb.org/>
- (k) Our firm, Joint Venture partners, members of our respective management and supervisory boards of directors, proposed personnel, parent company, Subcontractors or Suppliers for any part of the contract who are named in the bid, consultants, manufacturers, and service providers, are not suspended, debarred, declared ineligible, or subject to any international sanctions by any international organization, multilateral development bank and other donor agency.

If applicable, please state details:

- (l) Our firm, Joint Venture partners, members of our respective management and supervisory boards of directors, proposed personnel, and parent company, in the last 10 years preceding the date of this letter of bid, have never been convicted of any criminal offense, or been subjected to any criminal, civil, or administrative orders, monitorship or enforcement actions, involving any integrity violation or on grounds comparable to any integrity violation.

If applicable, please state details:

- (m) Our firm, Joint Venture partners, members of our respective management and supervisory boards of directors, proposed personnel, parent company, Subcontractors or Suppliers for any part of the contract who are named in the bid, consultants, manufacturers, and service providers, can make and receive payments through the international banking system or otherwise discharge the Employer's obligation upon initiation of wire transfer.

If unable to make or receive funds through the international banking system or otherwise discharge the Employer's obligation upon initiation of wire transfer, please state the details:

- (i) Nature of the restriction:_____
- (ii) Jurisdiction of the restriction:_____
- (iii) Other relevant details:_____

- (n) Our firm, Joint Venture partners, members of our respective management and supervisory boards of directors, proposed personnel, parent company, Subcontractors or Suppliers for any part of the contract who are named in the bid, consultants, manufacturers, and service providers, are not from a country which is prohibited to export goods or services to, or receive any payments from the Employer's country and/or are not prohibited to receive payments for particular goods or services by the

¹ These institutions include African Development Bank, European Bank for Reconstruction and Development (EBRD), Inter-American Development Bank (IADB), and the World Bank Group. According to para. 9 of the Agreement, other international financial institutions may join upon the consent of all Participating Institutions and signature of a Letter of Adherence by the international financial institution substantially in the form provided (Annex B to the Agreement). Upon adherence, such international financial institution shall become a Participating Institution for purposes of the Agreement. Bidders are advised to check www.adb.org/ integrity for updates.

Employer's country by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.

- (o) We understand that it is our obligation to notify the Employer of any changes in connection with the matters described in paragraphs (i), (k), (l), (m), (n), (o), (p) and (t) of this Letter of Bid.
- (p) [We are not a government-owned enterprise] / [We are a government-owned enterprise but meet the requirements of ITB 4.5].²
- (q) We have not been suspended nor declared ineligible by the Employer based on execution of a Bid- Securing Declaration in accordance with ITB 4.6.
- (r) At any time following submission of our Bid, we shall permit, and shall cause our Joint Venture partners, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the contract to permit ADB or its representative to inspect our sites, assets, accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB. We understand that failure of this obligation may constitute obstructive practice that may result in debarment and/or contract termination.
- (s) Regardless of whether the contract will be awarded to us, we shall preserve all accounts, records, and other documents related to bid submission for at least 5 years from the date of submission of the bid or the period prescribed in applicable law, whichever is longer.
- (t) If we are awarded the contract, we shall preserve all accounts, records and other documents related to the procurement and execution of the contract for at least 3 years after the completing the works contemplated in the relevant contracts or the period prescribed in applicable law, whichever is longer.
- (u) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section 6 (Employer's Requirements) and our technical proposal, or as otherwise agreed with the Employer.
- (v) We certify on behalf of the Bidder, that the information provided in the bid has been fully reviewed, given in good faith, and to the best of our knowledge is true and complete. We understand that it is our obligation to inform the Employer of any changes to the information as and when it becomes known to us. We understand that any misrepresentation that knowingly or recklessly misleads, or attempts to mislead may lead to the automatic rejection of the Bid or cancellation of the contract, if awarded, and may result in remedial actions, in accordance with ADB's Anticorruption Policy and Investigation and Enforcement Framework both, as amended from time to time.

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

Stamp/Seal:

² Use one of the two options as appropriate.

Country of Origin Declaration Form

Name of Bidder _____ IFB Number _____ Page ____ of ____

Item	Description	Country of Origin

Letter of Price Bid

The Bidder must accomplish the Letter of Price Bid on its letterhead clearly showing the Bidder's complete name and address.

Date:

OCB No.:

Invitation for Bid No.:

To: *[insert complete name of the Employer]*

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We acknowledge that we have read and understand ADB's Anticorruption Policy (1998) and Investigation and Enforcement Framework, both as amended from time to time.
- (c) We offer to execute in conformity with the Bidding Documents and the Technical Bid submitted for the following Works. *[insert narrative]*
- (d) The total price of our Bid, excluding any discounts offered in item (e) below is:

[amount of foreign currency in words], [amount in figures], and [amount of local currency in words], [amount in figures]

The total bid price from the Grand Summary (Schedule No. 5) should be entered by the Bidder inside this box. Absence of the total bid price in the Letter of Price Bid may result in the rejection of the bid.

- (e) The discounts offered and the methodology for their application are: *[insert discounts and methodology for their application if any]*
- (f) Our Bid shall be valid for a period of *[insert bid validity period as specified in ITB 20.1 of the BDS]* days starts from the date fixed for the bid submission deadline in accordance with ITB 24.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (g) If our Bid is accepted, we commit to obtain performance security in accordance with the Bidding Document.
- (h) We understand that this bid, together with your written acceptance thereof included in your notification of award through the issuance of Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.

- (i) We understand that you are not bound to accept the first-ranked bid or any other bid that you may receive.
- (j) At any time following submission of our Bid, we shall permit, and shall cause our Joint Venture partners, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the contract to permit ADB or its representative to inspect our site, assets, accounts, and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB. We understand that failure of this obligation may constitute obstructive practice that may result in debarment and/or contract termination.
- (k) Regardless of whether the contract will be awarded to us, we shall preserve all accounts, records, and other documents related to bid submission for at least 5 years from the date of submission of the bid or the period prescribed in applicable law, whichever is longer.
- (l) If we are awarded the contract, we shall preserve all accounts, records, and other documents related to the procurement and execution of the contract for at least 3 years after completing the works contemplated in the relevant contracts or the period prescribed in applicable law, whichever is longer.
- (m) We confirm and stand by our commitments and other declarations made in connection with the submission of our Letter of Technical Bid.
- (n) We certify on behalf of the Bidder, that the information provided in the bid has been fully reviewed, given in good faith, and to the best of our knowledge is true and complete. We understand that it is our obligation to inform the Employer of any changes to the information as and when it becomes known to us. We understand that any misrepresentation that knowingly or recklessly misleads, or attempts to mislead may lead to the automatic rejection of the Bid or cancellation of the contract, if awarded; and may result in enforcement and disclosure actions, in accordance with ADB's Anticorruption Policy and Investigation and Enforcement Framework (both as amended from time to time).

Name

In the capacity of

Signed

Duly authorized to sign the Bid for and on behalf of

Date

Stamp/Seal:.....

Price Schedules

PREAMBLE

General

1. The Price Schedules are divided into separate Schedules as follows:
 Schedule No. 1: Plant and Mandatory Spare Parts Supplied from Abroad
 Schedule No. 2: Plant and Mandatory Spare Parts Supplied from within the Employer's Country
 Schedule No. 3: Design Services
 Schedule No. 4: Installation and Other Services
 Schedule No. 5: Grand Summary
 Schedule No. 6: Recommended Spare Parts
2. The Schedules do not generally give a full description of the plant to be supplied and the services to be performed under each item. Bidders shall be deemed to have read the Employer's Requirements and other sections of the Bidding Document and reviewed the Drawings to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices. The entered rates and prices shall be deemed to cover the full scope as aforesaid, including overheads and profit.
3. If Bidders are unclear or uncertain as to the scope of any item, they shall seek clarification in accordance with ITB 7 prior to submitting their bid.

Pricing

4. The units and rates in figures entered into the Price Schedules should be typewritten or if written by hand, must be in print form. Price Schedules not presented accordingly may be considered nonresponsive. Any alterations necessary due to errors, etc., shall be initialed by the Bidder.
 As specified in the Bid Data Sheet and Special Conditions of Contract, prices shall be fixed and firm for the duration of the Contract, or prices shall be subject to adjustment in accordance with the corresponding Appendix (Price Adjustment) to the Contract Agreement.
5. Bid prices shall be quoted in the manner indicated and in the currencies specified in the Instructions to Bidders in the Bidding Document.
 For each item, Bidders shall complete each appropriate column in the respective Schedules, giving the price breakdown as indicated in the Schedules.
 Prices given in the Schedules against each item shall be for the scope covered by that item as detailed in Section 6 (Employer's Requirements) or elsewhere in the Bidding Document.
6. Payments will be made to the Contractor in the currency or currencies indicated under each respective item.
7. When requested by the Employer for the purposes of making payments or part payments, valuing variations or evaluating claims, or for such other purposes as the Employer may reasonably require, the Contractor shall provide the Employer with a breakdown of any composite or lump sum items included in the Schedules.
8. The quantities specified in Price Schedule No. 1 and Price Schedule No. 2 are final, except for Item Nos. I(A)(2) and E(5), which are indicative/estimated and provided for bidding purposes only. For these two items, the Contractor shall place orders to manufacturers after completion

of detailed engineering. The basis of payment for these two items will be the actual quantities supplied by the Contractor and verified by the Project Manager/Consultant.

The quantities as shown in the Price Schedule No. 4 are estimated quantities and provisional only being given as an indication of the Scope of Work to enable the Bidder to bid for different items of the Works in accordance with his estimate of costs. The estimated quantities shall be used for comparing the Bids. It is, however, be noted that the basis of payment will be the actual quantities of work executed and measured/counted by the Contractor and verified by the Project Manager/Consultant. Moreover, the unit rates quoted for these items in Schedule No. 4 shall remain fixed and shall apply to the actual measured/counted quantities, irrespective of whether the actual quantity is higher or lower than the estimated quantity, except as expressly provided otherwise under the Contract.

9. Contractor will determine the required material quantities after carrying out detailed engineering and survey/check survey of the transmission line route and procure material accordingly. In the unlikely event that any material is required to be provided by NGC from its own inventory, the Contractor shall be responsible for transporting such material from the designated NGC warehouse to the construction site. Surplus material from the site will be transported to designated store/warehouse of NGC by the contractor. All cost related to transportation shall be borne by the contractor. Nonetheless, it is sole responsibility of the contractor to complete the project within scheduled time and in compliance of specification and employer's requirements.
10. Price of any other item not covered specifically in the price schedule but is required for completion; commissioning and operation of the overhead transmission line shall be deemed to have been included in the price schedule.
11. The applicable standards/specifications alongwith their amendments placed in Volume-II are to be read carefully before filling up the schedule of prices.
12. The bidder to confirm that their prices include all direct taxes applicable in their country and in Employers' country.

Price Schedules

(Attached as Excel Sheets)

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

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

Schedule No. 3. Design Services

Schedule No. 4. Installation and Other Services

Summary Sheet for following sheets:

- (i) Installation (inclusive of transportation / insurances and other incidental costs)
- (ii) Installation services for additional work
- (iii) Vehicles procurement and O&M (during the term of the contract)

Schedule No. 5. Grand Summary

Schedule No. 6. Recommended Spare Parts

Tables of Adjustment Data (Not Applicable)

Bid Security

Bank Guarantee

[Bank's name, and address of issuing branch or office]³

Beneficiary: Chief Engineer (MP&M) NTDC
8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan

Date:

Bid Security No.:

We have been informed that [name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated [insert date] (hereinafter called "the Bid") for the execution of [insert name of contract] under Invitation for Bids No. [please specify] ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we [name of Bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [amount in words] [amount in figures] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Letters of Technical and Price Bid; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB, or (iii) fails or refuses to furnish a domestic preference security, if required.

This guarantee will expire (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the Performance Security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder, or (ii) 28 days after the expiration of the Bidder's bid.

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

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No.758.⁴

..... Authorized signature(s) and bank's seal (where appropriate)

³ All italicized text is for use in preparing this form and shall be deleted from the final document.

⁴ Or the employer may use "Uniform Rules for Demand Guarantees (URDG), ICC Publication No. 458" as appropriate.

Bid-Securing Declaration (Not Applicable)

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

Bid No.: *[insert number of bidding process]*

Alternative No.: *[insert identification No if this is a bid for an alternative]*

To: *[insert complete name of the employer]*

We, the undersigned, declare that:

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

We accept that we will automatically be suspended from being eligible for bidding in any contract with the Borrower for the period of time of *[insert number of years as indicated in ITB 21.2 of the BDS]* starting on the date that we receive a notification from the Employer, if we are in breach of our obligation(s) under the bid conditions, because we

- (a) have withdrawn our Bid during the period of bid validity specified in the Letters of Technical and Price Bid; or
- (b) do not accept the correction of errors in accordance with the Instruction to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of our Bid by the Employer during the period of bid validity, (i) fail or refuse to execute the Contract; if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the ITB.

We understand that this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) 28 days after the expiration of our Bid.

Signed: *[insert signature of person whose name and capacity are shown]*

In the capacity of *[insert legal capacity of person signing the Bid-Securing Declaration]*

Name: *[insert complete name of person signing the Bid-Securing Declaration]*

Duly authorized to sign the bid for and on behalf of *[insert complete name of the bidder]*

Dated on _____ day of _____, _____ *[insert date of signing]*

Corporate Seal *(where appropriate)*

Technical Proposal

The technical proposal is expected to include as a minimum information described in the following forms:

- i. Design Methodology;
- ii. Construction Management Strategy;
- iii. Construction Methods for Key Components;
- iv. Design and Construction Schedule;
- v. Quality Assurance and Quality Control;
- vi. Environmental, Health, and Safety Management Plan;
- vii. Anticipated Risks Evaluation;
- viii. Personnel and Organizational Chart;
- ix. Personnel;
- x. Equipment;
- xi. List of Subcontractors;
- xii. Local Participation Plan; and
- xiii. Technical Proposal Content for Merit Point Criteria (MPC)

(i) Design Methodology

The Bidder shall submit a design methodology that addresses as a minimum the following:

- a. organizational arrangements for the design, including: team structure, roles and responsibilities, interface arrangements, design review and approval procedures, and quality assurance arrangements;
- b. proposed design deliverables
- c. design statement setting out how the Employers Requirements will be achieved;
- d. any added value the Bidder will bring, including examples of innovative aspects of the design;
- e. details of how the Environmental, Health, and Safety (EHS) requirements, and any proposal to enhance Environmental, Health, and Safety outcomes, will be incorporated into all design stages, and how the implications for the construction phase has been considered; and
- f. modifying or including any other relevant information, as appropriate.

(ii) Construction Management Strategy

The Bidder shall submit a construction management strategy that addresses as a minimum:

- a. organizational arrangements for the construction management, including: team structure, roles and responsibilities, interface arrangements, approval procedures, and quality assurance arrangements;
- b. subcontractor selection and management;
- c. obtaining and managing consents, permits, and approvals;
- d. site setup, including access, accommodation, welfare facilities, arrangement for plant and material storage;
- e. construction phasing proposals, including sequence of work and management of conflicting activities;
- f. ensuring that geotechnical investigations or other advance works meet the environmental, health, and safety requirements; and
- g. sustainability aspects demonstrating the Bidder's approach and commitment to sustainable construction practices (e.g., energy efficiency, reduction of wastage, material reduction, sources of materials, and others).

(iii) Construction Methods for Key Components

Bidders shall provide typical method statements for the following key activities. Each method statement shall describe the proposed approach to the construction activity, the level of staffing and experience, the safe system of work, and the construction equipment to be used.

Bidders may indicate the key activities methods for construction depending on the final design, or may designate some of the activities using temporary methods until the definitive designs are completed.

1. Clearing of Right-of-Way (ROW)
2. Validation and Verification of Survey Data
3. Development and implementation of Transposition Scheme
4. Verification and Confirmation of Soil Investigation Data
5. Construction of Conventional/Dry Foundations
6. Construction of Pile Foundations
7. Erection of Steel Towers
8. Stringing and Installation of Conductor and OPGW
9. Testing & Commissioning

(iv) Design and Construction Schedule

Bidders shall set out a work program for the design and construction of the Works to be undertaken, including the mobilization phase, showing identification of major milestones, and critical path. Detailed timetables may be submitted (as appropriate) for the following aspects:

- a. Design of the Works, including the submission of the design deliverables, review, and approval of the design by the Project Manager;
- b. Processes and deliverables needed to commence the Works;
- c. Execution of the Works within the Time for Completion, highlighting activities imposing constraints on the construction sequence;
- d. Testing, commissioning, and handing over of the completed Works;
- e. SEAH orientation conference; and

Work programs shall be submitted in paper (hard copy) and in a PDF format compatible with known computer programs, such as for example, PRIMAVERA, TILOS, CAD, or MS Project (GANTT graphics), or similar programs.

Programs must include milestones, when they are applicable, and the specific personnel designation and/or labor outlines, planned for the fulfillment of each program and phase or program activity:

- f. General work program with an outline of designated personnel and tables of theoretical duration of tasks or activities. Graphic displays of the work progress in flowcharts to show daily production for each activity and the critical path.
- g. Detailed work program to develop the design to include a personnel allotment outline, equipment, and other resources anticipated, indicating quantity, type, and capacity. Graphic displays such as GANTT Graphics, including milestones and required periods for the Project Manager to verify and approve. Minimum unit of time: 1 week.

(v) Quality Assurance and Quality Control

Bidders shall have to submit their approach and resources for the quality assurance procedure and quality control process in connection with works and services to be executed under the Contract.

A draft quality management plan should be submitted as supporting documentation.

(vi) Environmental, Health and Safety Management Plan (EHSMP)

The Bidder shall submit an outline Environmental, Health, and Safety Management Plan (EHSMP) commensurate with the risks and impacts of the proposed works and activities as described in the EMP. These strategies and plans shall describe in detail the actions, materials, equipment, management processes, and others that will be implemented by the Contractor, and its subcontractors to avoid, minimize, and/or mitigate environmental, health, and safety risks associated with implementing the projects activities throughout the project cycle.

In developing these strategies and plans, the Bidder shall have regard to the EHS provisions of the contract and EHS risks, including those as may be more fully described in Section 6 (Works' Requirements).

The proposal shall also include details in relation to in-house policies and procedures acceptable to the Employer for EHS management such as:

- Availability of the valid International Organization for Standardization (ISO) certification or internationally recognized equivalent (equivalency to be demonstrated by the Bidder), and applicable to the worksite:
[such as], Quality management certificate ISO 9001, Environmental management certificate ISO 14001, Health and safety management certificate ISO 45001
- Grievance management for both contractor staff and any issues arising between contractor staff and nearby community members
- Performance monitoring system for contractor staff/ subcontractors/ suppliers/suppliers
- Existence of an Ethics Charter.
- Existence of a system for monitoring compliance with EHS commitments for the Bidder's Subcontractors and all its partners.
- Existence of official company procedures for the management of the following relevant points:
 - EHS resources and facilities and EHS monitoring system;
 - Project Areas management information (base camps, quarries, burrow pits, storage areas);
 - Health and Safety on worksites policy and related guidance;
 - Labor Management System;
 - Local recruitment and EHS training of local staff, subcontractors, and/or local partners;
 - Community stakeholder engagement practice;
 - Traffic management practice;
 - Hazardous products management practice;
 - Waste management practice;
 - Protection of water resources;
 - Biodiversity protection practices;
 - Site rehabilitation and revegetation practice;
 - Local cultural heritage protection practice;
 - Erosion and sedimentation practices; and
 - Control of infectious and communicable diseases (HIV/AIDS, malaria, COVID-19, and others)
- Personnel management system: HR policies and procedures, including documented worker grievance mechanisms and evidence of effective implementation (e.g., records of grievances received and resolved).
- System that executes and manages labor management policies and procedures day-to-day
- Evidence of compliance reports to demonstrate implementation of the EMP, audit report in past projects
- Documented HSMP plans, fatalities-free record or evidence of corrective actions in past projects

(vii) Anticipated Risks Evaluation;

The Bidder should submit a risk register identifying the hazards anticipated during the implementation of the contract (e.g., geotechnical and subsurface risks).

For the key hazards ranked by impact, the risk register shall include a description of the hazard, an assessment of the potential impact on EHS, cost, program or other, and the proposed mitigation strategy for each hazard.

(viii) Personnel and Organizational Chart

The Bidder shall describe the organization of its personnel (an organizational chart shall be provided) specifying the number and specialties of each class of personnel.

For each key personnel, the Bidder shall specify the time periods and number of working days to perform each activity under the design and works implementation phases.

Likewise, for each specialty, the Bidder shall describe the number of personnel and will show their input over the time periods under the design and the implementation of the Works.

(ix) Personnel**Form PER – 1: Proposed Personnel**

Bidders should provide the details of proposed personnel and their experience record in the relevant Information Forms below for each of the candidate.

1.	Title of position*
	Name
2.	Title of position*
	Name
3.	Title of position*
	Name
4.	Title of position*
	Name
[as needed]	Title of position*
	Name

* All titles of positions will be as listed in Section 6 (Employer's Requirements).

Form PER – 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Use one form for each position.

Position		
Personnel information	Full Legal Name	Date of Birth
	Known as	Place of Birth
	Nationality	Citizenship
	Type of government ID	ID number
	Attach a copy of ID to this form Professional qualifications	
Present employment	Name of employer	
	Address of employer	
	Telephone	Contact (manager/personnel officer)
	Fax	E-mail
	Job title	Years with present employer

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

[illegible]

Declaration

I, the undersigned, certify that to the best of my knowledge and belief, the information contained in this Form PER – 2 correctly describes myself, my qualifications, and my experience.

I confirm that I am available throughout the expected time schedule for this position as provided in the Bid.

I understand that any misrepresentation or omission in this Form may:

- a. be taken into consideration during Bid evaluation;
- b. result in my disqualification from participating in the Bid;
- c. result in my dismissal from the Contract.

Name of Key Personnel: _____ *[insert name]* _____

Signature: _____

Date (day month year): _____

Countersignature of authorized representative of the Bidder:

Name of authorized representative: _____

Signature: _____

Date: (day month year): _____

(x) Equipment**Form EQU: Plant and Equipment**

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

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 Bidder.

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	

FORM: UNDERTAKING FOR SUPPLY OF EQUIPMENT REQUIRED FOR EXECUTION / CONSTRUCTION OF THE PROJECT

The bidder must accomplish the undertaking on stamp paper with bidder's complete name and address.

Director General (Procurement), NGC
8th Floor, Shaheen Complex,
Egerton Road Lahore, Pakistan

UNDERTAKING

I / We, the undersigned, do hereby solemnly agree and undertake,

that all Equipment and T&P required for the execution/construction of the works shall be supplied/furnished by the {...name of bidder...} as stated in Article 8: Equipment Requirements; Section-6 of the Bidding Documents.

I / We undertake further that if the equipment is not furnished/supplied by the {...name of bidder...} as per Sub-Clause 18.2: "Program of Performance"; General Conditions of the Contract, for the execution/construction of the Works, the Employer shall have the right to take any action including termination of the Contract, encashment of performance guarantee and future blacklisting/debarring from participating in bidding process for the NGC (formerly NTDC) projects as per NGC (formerly NTDC) SOP for blacklisting.

For and on Behalf of:

Authorized Signatory:

Date:

Stamp/Seal:

(xi) List of Subcontractors**(Proposed Subcontractors and/or Manufacturers for Major Items of Plant and Services)**

The following Subcontractors and/or Manufacturers are proposed for carrying out the item of the facilities indicated based on Criterion 1.5 of Section 3 (Evaluation and Qualification Criteria). Bidders are free to propose not more than three (03) manufacturers/subcontractors for each item.

Major Items of Plant and Services	Proposed Subcontractors or Manufacturers	Nationality	Type/Designation of proposed Equipment/material	Name of Type Testing Laboratory	Type Test Report No.

A. Manufacturer(s) of Plant

1. Tower
2. Conductor
3. OPGW
4. Insulator Hardware assemblies
5. Insulators
6. RTV Silicone Rubber Coating manufacturer and Coating Applicator
7. Hardware for OPGW
8. Joint Box for OPGW
9. Accessories (for Conductor/OPGW)
10. Spacer Dampers/Spacers (for Conductor)
11. Stockbridge Dampers (for Conductor/OPGW)
12. Grounding/Earthing Material

B. Subcontractor(s) for Services

1. Installation Works
2. Civil Works

(xii) Local Participation Plan

Bidders are required to submit a Local Participation Plan demonstrating their commitment to employing the minimum required local labor. This plan must include a narrative addressing the following areas, along with supporting data submitted using the provided forms:

1. **Execution and Sourcing Plan**
 - Description of the proposed approach to engage local labor across various project phases.
 - Indicative sourcing plan showing potential sources of local labor (e.g., local communities and employment agencies).
 - Labor deployment plan (*bidder may append a filled table following template provided below [Form LP1] along with any relevant supporting attachments*)
 - (others)
2. **Stakeholder Roles and Responsibilities**
 - Identification of key stakeholders involved in implementing local participation (contractor, subcontractors, and suppliers).
 - Clear delineation of roles, responsibilities, and communication mechanisms among those stakeholders to support effective coordination and monitoring.
 - (others)
3. **Risk and Contingency Planning**
 - Identification of potential risks (e.g., shortage of skilled labor, migration, or conflict with agricultural seasons for example).
 - Mitigation measures and contingency actions to ensure uninterrupted achievement of participation targets.
 - (others)
4. **Organizational Arrangements**
 - Linkages to the bidder's project organization chart, highlighting key positions to be filled by local personnel.
 - Designation of a responsible focal person or team for managing and reporting on local participation.
 - (others)
5. **Local Job Creation**
 - Other local job creation proposals addressing the technical criteria; such as labor exceeding mandatory requirements (e.g., 50%), gender-sensitive hiring, and increased usage of skilled labor.
 - Proposal for implementation (*bidder may append a table including details using template Form LP2*).
 - (others)
6. **Skills Development**
 - On-the-job training programs.
 - Structured training programs and workshops.
 - Knowledge transfer.
 - (others)
7. **Monitoring and Reporting Mechanism**
 - Description of how progress toward local participation targets will be tracked, verified, and reported during implementation.
 - Use of standard forms and periodic reporting consistent with contract requirements.
 - (others)

Form LP1*

Category of Labor	Estimated Number of Local Labor (person-days)	Estimated Total Labor (person-days)	Percentage of Local Labor	Remarks
Skilled Labor				
Semi-skilled Labor				
Unskilled Labor				
Total				

* Bidders may further attach a labor histogram or labor deployment schedule to support the data (see below). The labor count should be limited to personnel deployed during construction activities, and should not include any estimates pertaining to the defects notification period.

The bidder may further provide details of the labor engaged from the subcontractors and suppliers if required.

Labor Histogram Template (Attachment to Form LP1)

Month	Skilled (Local)*	Skilled (Foreign)*	Semi-skilled (Local)*	Semi-skilled (Foreign)*	Unskilled (Local)*	Unskilled (Foreign)*	Total Labor*	% Local
Month 1								
Month 2								
Month 3								
Month 4								
...								
...								
Average/ Total								

* Stated in person-days

Labor Deployment Schedule Template (Attachment to Form LP1)

Position	Nationality	No. of Personnel	Start Month	End Month	Duration (months)	% Local Labor	Remarks
Project Manager	Foreign						Key staff
Site Engineer	Local						Supervision
Foreman	Local						...
Skilled Labor (Mason)	Local						...
Skilled Labor (Carpenter)	Local						...
Semi-skilled Labor	Local						...
Unskilled Labor	Local						...
Equipment Operator	Foreign						...
...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...
Total	...	...	...	...	...	≥50 Local	...

[following tables are used if the relevant merit point criteria is used]

Bidders shall use the form below to provide information demonstrating their commitment to achieving the additional local job creation measures.

Form LP2

Type of Activity	Estimated Number	Indicative Description of Activities
Example: Local labor above 50% target		
Total local labor force (person-days)		
Percentage		
Additional labor force above 50% (person-days)		
Percentage above mandatory requirement		
Example: Gender-sensitive hiring		
Total local labor force (person-days)		
Female (person-days)		
Male (person-days)		
Percentage of female labor		
Example: Increased usage of skilled labor		
Total local labor force (person-days)		

Skilled labor		
Semi-skilled labor		
Unskilled labor		
Percentage of skilled labor		

Bidders shall use the form below to provide information demonstrating their commitment to implementing skills development activities.

Form LP3

Type of Activity	Estimated Number of events	Indicative Description of Activities
Skills development programs		e.g., On-the-job training for laborers
Local partnerships for knowledge transfer		e.g., Collaboration with local universities, apprenticeship programs
Technology transfer initiatives		e.g., Use of local materials or adaptation of techniques
Community-based training		e.g., Health and safety awareness, site operations basics
Additional activities (if any)		

(xiii) Technical Proposal Content for Merit Point Criteria (MPC)

Main Criteria / Sub-criteria	Narrative Evaluation Criteria/ Technical Proposal Content
1) Construction Methodology	
1.1 General Construction Strategy and Methodology	<p>The bidder shall submit a comprehensive and project-specific description of its understanding of the Works, proposed construction methods, and associated risks.</p> <p>Understanding of Scope and Risk Identification The bidder's submission shall:</p> <ul style="list-style-type: none"> • Demonstrate a clear understanding of the scope, complexity, constraints, and site conditions of the Works. • Identify key technical, logistical, environmental, safety, quality, and interface risks specific to the project. • Describe practical mitigation and management measures integrated into the proposed approach. <p>General Construction Methodology The bidder's submission shall:</p> <ul style="list-style-type: none"> • Describe the principal construction methods and techniques proposed for the Works. • Justify the suitability of these methods in relation to site conditions, technical requirements, constructability, safety, environmental considerations, and programme constraints. • Demonstrate consistency with the proposed schedule and resource deployment. <p>Special or Sector-Specific Works For each identified special or sector-specific component, the bidder's submission shall:</p> <ul style="list-style-type: none"> • Present a dedicated method statement describing sequencing, technical approach, and integration with other works. • Identify key personnel, staffing levels, and relevant experience. • Describe plant, equipment, and temporary facilities to be used. • Outline safe systems of work, hazard controls, and compliance measures. • Identify key implementation risks and mitigation measures, including options for accelerating progress if required. <p>Critical Path Activities The bidder's submission shall:</p> <ul style="list-style-type: none"> • Identify activities on the critical path of the construction schedule. • Provide project-specific method statements for these activities, including sequencing, resources, safety controls, and risk mitigation. • Demonstrate alignment with the construction programme, mobilisation strategy, and overall risk management approach.

Main Criteria / Sub-criteria	Narrative Evaluation Criteria/ Technical Proposal Content
<p>1.2 Construction Schedule - Mobilisation Plan</p>	<p>The bidder shall submit a coherent and realistic mobilisation plan demonstrating readiness to commence the Works in accordance with the Contract Requirements.</p> <p>Overall Mobilisation Strategy The bidder's submission shall:</p> <ul style="list-style-type: none"> • Describe the overall approach to mobilisation, including key processes, deliverables, and responsibilities. • Identify and sequence major preparatory activities required prior to and at commencement of the Works. • Demonstrate consistency with the construction schedule and contractual milestones. • Highlight key risks and dependencies during the mobilisation phase and proposed mitigation measures. <p>Establishment of Site Facilities The bidder's submission shall:</p> <ul style="list-style-type: none"> • Describe arrangements and timelines for establishing site offices and facilities for both the Engineer and the Contractor. • Outline implementation of site security and safety measures, including fencing, signage, access control, traffic management, and related provisions. <p>Materials Sourcing and Approvals The bidder's submission shall:</p> <ul style="list-style-type: none"> • Describe procedures and timelines for sourcing, testing, submission, review, and approval of permanent works materials (e.g., aggregates, concrete mix designs, reinforcing steel, masonry units). • Outline procurement and supply chain arrangements, including fabrication, shipping, delivery, and coordination with the construction programme. <p>Equipment Mobilisation The bidder's submission shall:</p> <ul style="list-style-type: none"> • Identify key items of equipment required for the Works. • Describe the source, ownership or leasing arrangements, and availability of each item. • Explain mobilisation and delivery arrangements, including timing relative to the works programme and milestones. • Provide contingency measures to address potential delays or availability risks. • Demonstrate alignment between equipment deployment, sequencing of works, and the overall mobilisation strategy.
<p>1.3 Stakeholder Management</p>	<p>The bidder shall submit a clear and project-specific description of its proposed approach to community and stakeholder engagement in compliance with the Contract Requirements and applicable safeguard policies.</p> <p>Stakeholder Engagement and Communication</p>

Main Criteria / Sub-criteria	Narrative Evaluation Criteria/ Technical Proposal Content
	<p>The bidder's submission shall:</p> <ul style="list-style-type: none"> Describe the proposed arrangements for engagement and communication with key stakeholders, including local authorities, affected communities, utility providers, and other relevant parties. Demonstrate that the approach is appropriate to the nature, scale, location, and potential impacts of the Works. Identify roles and responsibilities for managing stakeholder engagement throughout the project lifecycle. <p>Public Health, Safety, and Traffic Communication The bidder's submission shall:</p> <ul style="list-style-type: none"> Describe measures for communicating health and safety risks to the public, including awareness activities and accident prevention measures. Outline arrangements for coordination and public communication related to traffic management and diversions, including advance notice and stakeholder coordination. Explain how public disturbance will be minimised during construction. <p>Consultation, Feedback, and Grievance Management The bidder's submission shall:</p> <ul style="list-style-type: none"> Describe the approach to public consultation before, during, and after construction. Outline mechanisms for receiving, recording, and responding to community feedback and grievances. Describe proposed community education and awareness activities (e.g., water conservation and pollution prevention) supporting environmental and safeguard compliance.
<p>1.4 Construction Schedule (alternatives)</p>	<p>Where proposing early completion, the bidder shall submit clear and practical proposals demonstrating how the Works, or identifiable parts thereof, could be taken over earlier than the Time for Completion specified in the Contract.</p> <p>Proposed Acceleration Measures The bidder's submission shall:</p> <ul style="list-style-type: none"> Describe practical and innovative measures to accelerate completion (e.g., revised sequencing, parallel working, increased resources, early procurement, technical or methodological improvements). Demonstrate that the proposals are realistic and compatible with the Contract Requirements. Clearly identify the specific sections or milestones affected. <p>Quantification of Time Savings The bidder's submission shall:</p> <ul style="list-style-type: none"> Quantify the impact of each proposed measure on the construction schedule.

Main Criteria / Sub-criteria	Narrative Evaluation Criteria/ Technical Proposal Content
	<ul style="list-style-type: none"> State the estimated number of calendar days saved relative to the contractual Time for Completion. Demonstrate how the time savings are incorporated into the programme logic. <p>Consistency and Integration The bidder's submission shall:</p> <ul style="list-style-type: none"> Ensure that any proposed acceleration or early take-over is consistently reflected in the construction schedule, mobilisation plan, and resource deployment. Confirm that the proposals are achievable within the contractual framework and without additional cost to the Employer.
<p>1.5 Record Keeping</p>	<p>The bidder shall submit a clear description of the document management system to be utilised on site for execution of the Works.</p> <p>Document Control Procedures The bidder's submission shall:</p> <ul style="list-style-type: none"> Describe the proposed system for creation, control, storage, retrieval, and archiving of project documents and records. Outline procedures for version control, access management, approvals, and traceability. Identify responsibilities for administering and maintaining the system. <p>Compliance and Integration The bidder's submission shall:</p> <ul style="list-style-type: none"> Explain how the system will support contractual, technical, quality assurance, environmental, health and safety, and reporting requirements. Demonstrate alignment with the Contract and applicable donor guidelines. <p>Sample Templates and Records The bidder's submission shall:</p> <ul style="list-style-type: none"> Provide representative examples of record sheets or templates (e.g., inspection and test records, site instructions, delivery records, incident reports, meeting minutes). Demonstrate that the proposed formats are clear, adequate, and suitable for effective project control and compliance.
<p>2) Materials, Equipment, and Logistics</p>	
<p>2.1 Supply Chain</p>	<p>The bidder shall submit a structured and credible approach to supply chain management, logistics, and internal material and workforce movement for the Works.</p> <p>Availability of Critical Materials and Equipment The bidder's submission shall:</p>

Main Criteria / Sub-criteria	Narrative Evaluation Criteria/ Technical Proposal Content
	<ul style="list-style-type: none"> Describe planning and coordination measures to ensure timely availability of critical materials and equipment. Identify principal suppliers, manufacturing sources, or import arrangements. Demonstrate reliability and suitability of these sources in meeting technical requirements and the construction programme. Explain scheduling and coordination mechanisms supporting efficient and timely delivery. <p>Supply Chain Quality Assurance The bidder's submission shall:</p> <ul style="list-style-type: none"> Describe systems to ensure quality from sourcing through delivery and incorporation into the Works. Outline supplier selection and pre-qualification criteria, including assessment of technical capability, capacity, past performance, and compliance with standards. Identify quality controls at source, such as audits, certifications, inspections, and testing. Describe monitoring of subcontractors and vendors, including performance oversight and corrective action procedures. Explain traceability and tracking arrangements for critical materials and equipment. <p>Risk Management and Contingency Measures The bidder's submission shall:</p> <ul style="list-style-type: none"> Identify key supply chain risks, including performance, compliance, and disruption risks. Describe mitigation measures, including alternative suppliers, sourcing routes, or contingency stocks. Demonstrate alignment with applicable contractual, environmental, and social safeguard requirements. <p>Logistics, Material Handling, and Storage The bidder's submission shall:</p> <ul style="list-style-type: none"> Provide a clear supply chain map showing material flow from source to site. Describe transportation, packaging, inspection upon receipt, and handling controls. Outline internal material movement, storage arrangements, and site logistics to support efficient execution.
<p>2.2 Equipment Compliance</p>	<p>The bidder shall submit a clear and comprehensive description of the plant and equipment proposed for execution of the Works.</p> <p>Identification and Suitability of Equipment The bidder's submission shall:</p> <ul style="list-style-type: none"> Identify the principal plant and equipment proposed for the project. Demonstrate availability and access arrangements (owned,

Main Criteria / Sub-criteria	Narrative Evaluation Criteria/ Technical Proposal Content
	<p>leased, rental, or to be procured).</p> <ul style="list-style-type: none"> • Confirm suitability of the equipment for the scope, methodology, and site conditions. • Identify any additional or specialised equipment proposed beyond the stated requirements and justify its necessity. <p>Alignment with Programme and Mobilisation The bidder's submission shall:</p> <ul style="list-style-type: none"> • Demonstrate that equipment deployment aligns with the construction schedule, mobilisation plan, and contractual milestones. • Describe mobilisation timing and sequencing for major equipment items. • Identify risks related to equipment availability and proposed mitigation measures. <p>Continuous Availability and Maintenance The bidder's submission shall:</p> <ul style="list-style-type: none"> • Describe arrangements to secure and maintain access to critical equipment throughout the Works, including lease agreements, rental contracts, supplier commitments, and backup provisions. • Outline maintenance and servicing plans, including spare parts availability and replacement strategies. • Demonstrate measures to minimise downtime and prevent disruption to the construction programme. <p>Risk Management The bidder's submission shall:</p> <ul style="list-style-type: none"> • Identify potential risks such as breakdowns, competing project demands, supply chain constraints, or mobilisation delays. • Provide credible contingency and mitigation measures to ensure compliance with contractual milestones and performance obligations.
<p>2.3 Specialized Equipment</p>	<p>The bidder's submission shall provide a clear and detailed description of any non-standard or specialised equipment proposed for the execution of the Works.</p> <p>Identification and Justification The bidder's submission shall:</p> <ul style="list-style-type: none"> • Identify all non-standard or specialised equipment proposed for use. • Explain the purpose and necessity of each item in relation to project-specific conditions, construction methodology, technical complexity, or programme requirements. • Demonstrate why standard equipment is insufficient for the tasks identified. <p>Personnel and Competency Requirements The bidder's submission shall:</p>

Main Criteria / Sub-criteria	Narrative Evaluation Criteria/ Technical Proposal Content
	<ul style="list-style-type: none"> Identify operators, technicians, or other personnel required for the safe and effective operation of the equipment. Provide details of proposed qualifications, certifications, training, and relevant experience of personnel. <p>Deployment, Operation, and Maintenance The bidder's submission shall:</p> <ul style="list-style-type: none"> Describe mobilisation arrangements, operational procedures, and maintenance requirements for each item of equipment. Demonstrate consistency with the construction schedule, safety management systems, and risk mitigation measures. Include contingency measures to address potential equipment downtime or operational challenges.
<p>2.4 Minimisation of Waste</p>	<p>The bidder shall provide comprehensive details of any project-specific initiatives proposed to minimise waste arising from the execution of the works.</p> <p>The bidder's submission shall describe the practical measures, operational controls, or innovative approaches that will be implemented to prevent, reduce, reuse, or recycle waste generated during construction activities. This may include, but is not limited to:</p> <ul style="list-style-type: none"> design-stage or planning-stage adjustments aimed at reducing material off-cuts and construction inefficiencies; measures to optimise material ordering, handling, storage, and protection to minimise damage and spoilage; on-site segregation, reuse, and recycling systems to maximise resource recovery; digital tools, prefabrication, modularisation, or modern construction methods that reduce waste generation; and processes for reducing waste from packaging, temporary works, or site facilities. <p>The bidder shall identify how each initiative will be operationalised on this project, the specific work elements it will apply to, and the expected benefits or reductions in waste quantities. Where relevant, the bidder shall outline any supporting data, assumptions, or previous experience that demonstrates the feasibility and likely effectiveness of the proposed waste-minimisation measures.</p>
<p>3) Environmental, Health and Safety (or Environmental and Social)</p>	
<p>3.1 Site Health and Safety</p>	<p>The bidder's submission shall include a coherent, project-specific draft Health and Safety Plan (H&S Plan) that addresses all contractual and statutory obligations and demonstrates a structured approach to managing H&S risks on site.</p> <p>Site Details and H&S Facilities The bidder's submission shall:</p> <ul style="list-style-type: none"> Provide a project site layout showing first aid posts, emergency equipment, muster points, welfare facilities, and

Main Criteria / Sub-criteria	Narrative Evaluation Criteria/ Technical Proposal Content
	<p>safety signage.</p> <ul style="list-style-type: none"> Describe segregation of hazardous work areas from public and worker circulation zones. Explain arrangements for safe access/egress, lighting, sanitation, and potable water. <p>Site Security Measures The bidder's submission shall:</p> <ul style="list-style-type: none"> Describe site security procedures to prevent unauthorized access, theft, and public intrusion. Identify controlled entry points, visitor protocols, and responsibilities of security personnel. <p>H&S Personnel The bidder's submission shall:</p> <ul style="list-style-type: none"> Identify key H&S personnel, including H&S Manager, Safety Officers, first aiders, and emergency coordinators. Define roles, authority, and reporting lines consistent with project EHS frameworks. <p>Induction and Training The bidder's submission shall:</p> <ul style="list-style-type: none"> Include mandatory H&S induction for all workers and subcontractors. Describe specialized training for activities such as working at height, confined spaces, and lifting operations. Include refresher training and toolbox talks to maintain awareness and compliance. <p>Risk Management Procedures The bidder's submission shall:</p> <ul style="list-style-type: none"> Present a project-specific approach to hazard identification, risk assessment, and rating (likelihood × severity). Apply the hierarchy of controls (elimination, substitution, engineering, administrative, PPE). Integrate risk management into method statements, work permits, and daily briefings.
4) Sustainability	
4.1 Local Participation - Employment Plans	<p>The bidder shall present a functional and practical plan demonstrating how local workforce participation will be facilitated throughout the project's implementation.</p> <p>The plan shall describe recruitment procedures, skills-matching processes, engagement with local communities, and mechanisms to ensure sustained participation of local workers. The evaluation shall assess the robustness and feasibility of the bidder's approach, including the extent to which it supports inclusive and equitable employment outcomes.</p>

Manufacturer's Authorization

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

OCB No.: *[insert number of bidding process]*

To: *[insert complete name of the employer]*

WHEREAS

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

Goods to be supplied are:

- 1). ----- *[Insert name and/or brief description of the goods]*
- 2). -----

We hereby extend our full guarantee and warranty in accordance with Clause 27 of the General Conditions of Contract, with respect to the goods offered by the above firm.

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

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

Title: *[insert title]*

Duly authorized to sign this Authorization on behalf of *[insert complete name of the manufacturer]*

Dated on _____ day of _____, _____ *[insert date of signing]*

The bidder shall require the manufacturer to fill out this form in accordance with the instructions indicated. This letter of authorization should be signed by a person with the proper authority to sign documents that are binding on the manufacturer. The bidder shall include it in its bid, if so indicated in the BDS.

Affiliate Company Guarantee

Name of Contract/Contract No.: _____

Name and address of Employer: _____

(together with successors and assigns).

We have been informed that [name of Contractor] (hereinafter called the "Contractor") is submitting an offer for the above-referenced Contract in response to your invitation, and that the conditions of your invitation require its offer to be supported by an affiliate company guarantee.

In consideration of you, the Employer, awarding the Contract to the Contractor, we [name of affiliated company] irrevocably and unconditionally guarantee to you, as a primary obligation, that (i) throughout the duration of the Contract, we will make available to the Contractor our financial, technical capacity, expertise and resources required for the Contractor's satisfactory performance of the Contract; and (ii) we are fully committed, along with the Contractor, to ensuring a satisfactory performance of the Contract.

If the Contractor fails to so perform its obligations and liabilities and comply with the Contract, we will indemnify the Employer against and from all damages, losses and expenses (including legal fees and expenses) which arise from any such failure for which the Contractor is liable to the Employer under the Contract.

This guarantee shall come into full force and effect when the Contract comes into full force and effect. If the Contract does not come into full force and effect within a year of the date of this guarantee, or if you demonstrate that you do not intend to enter into the Contract with the Contractor, this guarantee shall be void and ineffective. This guarantee shall continue in full force and effect until all the Contractor's obligations and liabilities under the Contract have been discharged, when this guarantee shall expire and shall be returned to us, and our liability hereunder shall be discharged absolutely.

This guarantee shall apply and be supplemental to the Contract as amended or varied by the Employer and the Contractor from time to time. We hereby authorize them to agree on any such amendment or variation, the due performance of which and compliance with which by the Contractor are likewise guaranteed hereunder. Our obligations and liabilities under this guarantee shall not be discharged by any allowance of time or other indulgence whatsoever by the Employer to the Contractor, or by any variation or suspension of the works to be executed under the Contract, or by any amendments to the Contract or to the constitution of the Contractor or the Employer, or by any other matters, whether with or without our knowledge or consent.

This guarantee shall be governed by the law of the same country (or other jurisdiction) as that which governs the Contract and any dispute under this guarantee shall be finally settled under the [Rules or Arbitration provided in the Contract]. We confirm that the benefit of this guarantee may be assigned subject only to the provisions for assignment of the Contract.

Signed by:.....

Signed

by:

[signature]

[signature]

.....

[name]

.....

[name]

[position in parent/subsidiary company]

[position in parent/subsidiary company]

Date:.....

If permitted in accordance with ITB 38.2 of the BDS, the Bidder shall provide the Affiliate Company Guarantee Form filled out and signed by each subsidiary, parent entity, or affiliate that the Bidder submits for consideration of the Employer in determining its qualifications.

Time Schedule (Not Applicable)

To be used by Bidder when alternative Time for Completion is invited in ITB 13.2.

NOT APPLICABLE

Functional Guarantee of the Proposed Facilities (Not Applicable)**Form FUNC**

The Bidder shall copy on the left column of the table below, the identification of each functional guarantee required in the Specification and stated by the Employer in EQC 1.3.4 of Section 3 (Evaluation and Qualification Criteria), and on the right column, provide the corresponding value for each functional guarantee of the proposed plant and equipment.

Functional Guarantee [as required by the Employer in Section 3]	Functional Guarantee Value Offered by the Bidder
1.	
2.	
3.	
NOT APPLICABLE	

Bidder's Qualification

To establish bidders' qualification to perform the contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI - 1: Bidder's Information Sheet

Bidder's Information			
		Information of the Bidder	If the Bidder is a subsidiary or branch, information of any parent company/companies
Names	Full legal name(s)		
	Full trading name(s) (if any)		
Addresses	Registered address(es)		
	Trading address(es)		
	Postal address(es) (if different from trading address)		
Type of organization			
Country of constitution/incorporation/registration			
Year of constitution/incorporation/registration			
Corporate or registration number			
In case of a Joint Venture, legal name of each partner			
Bidder's authorized representative (name, address, telephone number(s), fax number(s), e-mail address)			
Attached are copies of the following documents: <ul style="list-style-type: none"> ☐ 1. In case of a single entity, articles of incorporation or constitution and company incorporation/registration of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2. ☐ 2. Authorization to represent the firm or Joint Venture named above, in accordance with ITB 22.2. ☐ 3. In case of a Joint Venture, a letter of intent to form a Joint Venture or Joint Venture agreement, in accordance with ITB 4.1. ☐ 4. In case of a government-owned enterprise, any additional documents not covered under 1 above required to comply with ITB 4.5. ☐ 5. Organizational chart and a list of Board of Directors. The successful Bidder shall provide additional information on beneficial ownership, using the Beneficial Ownership Disclosure Form. 			

Form ELI - 2: Joint Venture Information Sheet

Each partner of the Joint Venture and Specialist Subcontractor must fill out this form separately.

Joint Venture / Specialist Subcontractor Information			
Bidder's legal name			
		Information of Joint Venture Partner or Specialist Subcontractor	If any Joint Venture Partner or Specialist Subcontractor is a subsidiary or branch, information of any parent company/companies
Names	Full Legal name(s)		
	Full trading name(s) (if any)		
Addresses	Registered address(es)		
	Trading address (es)		
	Postal address (es) (if different from trading address)		
Type of organization			
Country of constitution/ incorporation/ registration			
Year of constitution/ incorporation/ registration			
Corporate or registration number			
Joint Venture Partner's or Specialist Subcontractor's authorized representative information (name, address, telephone number(s), fax number(s), e-mail address)			
Attached are copies of the following documents:			
☐ 1. Articles of incorporation or constitution and company incorporation/registration of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2.			
☐ 2. Authorization to represent the firm named above, in accordance with ITB 22.2.			
☒ 3. In the case of a government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5.			
☒ 4. Organizational chart and a list of Board of Directors. The successful Bidder shall provide additional information on beneficial ownership, using the Beneficial Ownership Disclosure Form.			

Subcontractors are those listed in Technical Proposal – Proposed Subcontractors and/or Manufacturers for Major Items of Plant and Services.

Form CON – 1: Historial Contract Non-Performance

Each Bidder must fill out this form in accordance with Criteria 1.2.1 and 1.2.3 of Section 3 (Evaluation and Qualification Criteria) to describe any history of non-performing contracts and pending litigation or arbitration formally commenced against it.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name below:

Joint Venture Partner: _____

Table 1: History of Nonperforming Contracts

Choose one of the following:			
☐ No nonperforming contracts. ☐ Below is a description of nonperforming contracts involving the Bidder (or each Joint Venture partner if Bidder is a Joint Venture).			
Year	Description	Amount of Nonperformed Portion of Contract (\$ equivalent)	Total Contract Amount (\$ equivalent)
[insert year]	Contract Identification: [indicate complete contract name/ number, and any other identification] Name of Employer: [insert full name] Address of Employer: [insert street/city/country] Reason(s) for nonperformance: [indicate main reason(s)]	[insert amount]	[insert amount]

Table 2: Pending Litigation and Arbitration

Choose one of the following:			
☐ No pending litigation, arbitration or any other material events impacting the net worth and/or liquidity of the bidder. ☐ Below is a description of all pending litigation, arbitration involving the Bidder or any other material events impacting the net worth and/or liquidity of the bidder (or each Joint Venture partner if Bidder is a Joint Venture).			
Year	Matter in Dispute	Value of Pending Claim (\$ Equivalent)	Value of Pending Claim as a Percentage of Net Worth
[insert year]	Contract Identification, as applicable: [indicate complete contract name/ number, and any other identification] Name of Employer, parties involved in the material events impacting the net worth and/or liquidity of the bidder: [insert full name] Address of Employer, parties involved in the material events impacting the net worth and/or liquidity of the bidder: [insert street/city/country] Matter of Dispute: [indicate full description of dispute] Party who initiated the dispute: [indicate "Employer" or "Contractor"] Status: [indicate status of dispute]	[insert amount]	[insert amount]

Table 2 of this form shall only be included if Criterion 1.2.3 of Section 3 (Evaluation and Qualification Criteria) is applicable.

Form FIN - 1: Historical Financial Performance

Each Bidder must fill out this form.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name below:

Joint Venture Partner: _____

Financial Data for Previous Years [US\$ Equivalent]		
Year 1:	Year 2:	Year 3:

Information from Balance Sheet

Total Assets (TA)			
Total Liabilities (TL)			
Net Worth = TA-TL			
Current Assets (CA)			
Current Liabilities (CL)			
Working Capital = CA – CL			

Most Recent Working Capital		To be obtained for most recent year and carried forward to FIN – 3 Line 1; in case of Joint Ventures, to the corresponding Joint Venture Partner's FIN – 3.
------------------------------------	--	---

Information from Income Statement

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

- ☐ Attached are copies of financial statements (balance sheets including all related notes, and income statements) for the last 3 years, as indicated above, complying with the following conditions.
1. Unless otherwise required by Section 3 of the Bidding Documents, all such documents reflect the financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries, or affiliates.
 2. Historical financial statements must be audited by a certified accountant.
 3. Historical financial statements must be complete, including all notes to the financial statements.
 4. Historical financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Form FIN - 2: Average Annual Turnover

Each Bidder must fill out this form.

The information supplied should be the Annual Turnover of the Bidder or each partner of a Joint Venture for the total certified payments received from the clients for contracts in progress or completed, converted to US dollars at the rate of exchange at the end of the period reported.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: _____

Annual Turnover Data for the Last 3 Years			
Year	Amount Currency	Exchange Rate	\$ Equivalent
Average Annual Turnover			

Form FIN – 3: Availability of Financial Resources

Bidders must demonstrate sufficient financial resources, usually comprising of Working Capital supplemented by credit line statements or overdraft facilities and others to meet the Bidder's financial requirements for its major contract commitments as defined in FIN-4, and the subject contract.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: _____

Financial Resources		
No.	Source of financing	Amount (US\$ equivalent)
1	Working Capital (to be taken from FIN – 1)	
2	Credit Line ^a	
3	Other Financial Resources ^b	
Total Available Financial Resources		

^a A credit line is an unconditional and legally binding loan extended to a Bidder by a financial institution. The credit line must be free from any pledge, encumbrance, or commitment to a third party or other transactions. Credit lines should be substantiated by a letter from the bank issuing the line of credit.

^b Other financial resources are financial assets not considered in the Working Capital. They are noncurrent assets (i.e., with a maturity beyond a 12-month period) such as a loan and/or trade receivables, bank deposits, debt, or equity instruments (provided they are classified as "available for sale" in the financial statements), and are free from any pledge or commitment to a third party and get their value from contractual rights or ownership.

Form FIN- 4: Financial Requirements for Major Contract Commitments

Bidders (or each Joint Venture partner) should provide information on their commitments on all major contracts⁵ that have been awarded⁶ after the deadline of the latest financial year for which the financial statements were submitted under Form FIN – 1.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: _____

Major Contract Commitments

No.	Name of Contract	Employer's Contact (Address, Tel, Fax)	Contract Completion Date	Outstanding Contract Value (X) ^a	Remaining Contract Period in months (Y) ^b	Monthly Financial Resources Requirement (X / Y)
1						
2						
3						
4						
Total Monthly Financial Requirement for Major Contract Commitments						\$

^a Values to be calculated from the letter of intent or letter of acceptance or the contract agreement (\$ equivalent based on the foreign exchange rate as of the Base Dates of the respective contracts).

^b Construction periods (Time for Completion) as defined in the respective contracts.

⁵ Major contracts mean contracts with a construction duration that is longer than 12 months

⁶ For the purposes of this criterion, "awarded" shall mean: either letter of intent or letter of acceptance has been received, or contract was signed

**Form FIN - 5: Self-Assessment Tool for Bidder's Compliance to Financial Resources
(Criterion 1.3.3 of Section 3)**

This form requires the same information submitted in Forms FIN – 3 and FIN – 4. All conditions of “Available Financial Resources Net of CCC $\geq$ Requirement for the Subject Contract” must be satisfied to qualify.

Form FIN - 5A: For Single Entities

For Single Entities: (A)	Total Available Financial Resources from FIN – 3 (B)	Total Monthly Financial Requirement for Major Contract Commitments (CCC) from FIN – 4 (C)	Available Financial Resources Net of Major Contract Commitments $D = (B - C)$	Requirement for the Subject Contract (E)	Results: Yes or No [D must be greater than or equal to E] (F)
_____ (Name of Bidder)				US\$ 30.23 million	

Form FIN - 5B: For Joint Ventures

For Joint Ventures: (A)	Total Available Financial Resources from FIN – 3 (B)	Total Monthly Financial Requirement for Major Contract Commitments (CCC) from FIN – 4 (C)	Available Financial Resources Net of Major Contract Commitments $D = (B - C)$	Requirement for the Subject Contract (E)	Results: Yes or No [D must be greater than or equal to E] (F)
One Partner:					
_____ (Name of Partner)				US\$ 12.092 million	
Each Partner:					
_____ (Name of Partner 1)				US\$ 7.5575 million	
_____ (Name of Partner 2)				US\$ 7.5575 million	
_____ (Name of Partner 3)				US\$ 7.5575 million	
All partners combined	D = Sum of available financial resources net of major contract commitments for all partners		D = _____	US\$ 30.23 million	

- Note -

Form FIN – 5 is made available for use by the bidder as a self-assessment tool, and by the employer as an evaluation work sheet, to determine compliance with the financial resources requirement as stated in 1.3.3. Failure to submit Form FIN - 5 by the Bidder shall not lead to bid rejection.

Form EXP – 1: Contracts of Similar Size 1.4.1.(a) and Nature 1.4.1(b)

Fill out one (1) form per contract. Each contract shall be supported by documents such as Signed Contract Agreement, Taking-Over Certificate, Contract Completion Certificate or Performance Certificate.

The exchange rate to be used to calculate the value of the contract for conversion to a specific currency shall be the selling rate of the National Bank of Pakistan on the date of the contract.

Contract of Similar Size and Nature			
Contract No of	Contract Identification and description		
Name of Employee			
Name of Contractor			
Award Date		Completion Date	
Role in Contract	☐ Contractor	☐ Management Contractor	☐ Subcontractor
Total Contract Amount	\$		
If partner in a Joint Venture or subcontractor, specify participation of total contract amount	Percent of Total	Amount	
Employer's name Address Telephone number Fax number E-mail			
Description of the Similarity in Accordance with Criterion 1.4.1 of Section 3 (Evaluation and Qualification Criteria)			
<p>Attached are copies of the following documents as evidence (Notarized English translation is needed if the evidence documents are not in English):</p> <p>☐ 1. Relevant Contract Agreement.</p> <p>☐ 2. Completion Certificates <u>or</u> Taking over Certificates <u>or</u> Performance Certificates <u>or</u> Operational Acceptance Certificates of the relevant Contract (s).</p> <p>☐ 3. JV agreement (if any) of the relevant Contract (s), showing value and nature of participation of the Bidder.</p> <p>Failure to provide the above required documents may cause rejection.</p>			

^a Bidder can submit separate forms corresponding to Similar Size (1.4.1 (a)) and Nature (1.4.1(b)) (if relevant)

Form EXP - 2: Experience in Key Activities

Fill out one (1) form per contract. Each contract shall be supported by documents such as Signed Contract Agreement, Taking-Over Certificate or Contract Completion Certificate.

Each Bidder must fill out this form.

In case of a Joint Venture, at least one of the Joint Venture Partners who will comply with the requirements must fill out this form and provide the Joint Venture Partner's name below:

Joint Venture Partner: _____

If complied by Specialist Subcontractor, the Specialist Subcontractor must fill out this form and provide the Specialist Subcontractor's name below:

Specialist Subcontractor: _____

Contract with Similar Key Activities		
Contract No of	Contract Identification & Description	
Name of Employee		
Name of Main Contractor		
Award Date		Completion Date
Role in Contract	☐ Contractor ☐ Management Contractor ☐ Subcontractor	
Total Contract Amount	\$	
If partner in a Joint Venture or subcontractor, specify participation of total contract amount	Percent of Total	Amount
Employer's name Address Telephone number Fax number E-mail		
Description of the Key Activities in Accordance with Criterion 1.4.2 of Section 3 (Evaluation and Qualification Criteria)		

Form EXP - 3: Subcontractors

Fill out one (1) form per contract.

Contract for the Major Items		
Contract No of	Contract Identification and Description	
Name of Employee		
Name of Main Contractor		
Name of subcontractor		
Award Date		Completion Date
Role in Contract	☐ Contractor ☐ Management Contractor ☐ Subcontractor	
Total Contract Amount	\$	
If partner in a Joint Venture or subcontractor, specify participation of total contract amount	Percent of Total	Amount
Employer's name Address Telephone number Fax number E-mail		
Description of the Major Items in Accordance with Criterion 1.5 of Section 3 (Evaluation and Qualification Criteria)		

Section 5 - Eligible Countries

Eligible countries are limited to all ADB members listed at www.adb.org/about/members, and any restrictions arising from ITB 4.8.

Section 6 - Employer's Requirements

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1. Scope of Supply of Plant and Services

The scope of work includes design, manufacture, insurance to Site(s), delivery to wharf at port of Karachi, unloading and loading at sea port of Pakistan, transportation to the transmission line site, unloading and storage at site, installation, testing and commissioning of Plant and design and construction of associated civil works for 500kV Transmission Line as specified here below and listed in the Price Schedules.

Procurement of Plant - Design, Manufacture, Supply, Installation, Testing & Commissioning of 500 kV Double Circuit Quad Bundle Transmissions line for:

- i. Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km)
- ii. Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km)

All materials, tools, equipment and services, necessary for the reliable and safe operation of the transmission line whether specified in these Documents or not, shall be included in the Bids.

The scope of work includes the Procurement of Plant - Design, Manufacture, Supply, Installation, Testing and Commissioning of 500kV Transmission Line as per Volume – II, Technical Provisions of these Bidding Documents.

The 500kV transmission line shall be of ACSR “Drake” conductors, with four conductors per phase, and OPGW installed on both peaks of the steel towers.

The survey/profile of the transmission line have been completed. The Plan and Profile Drawings, along with the KMZ route file and the indicative single-line diagram, are provided in Volume III of the Bidding Documents.

It may be noted that the survey and profile for the “Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station, approximately 6+6 km” have been completed only up to the loose points, as the locations of the gantries have not yet been finalized. The survey, plan, and profile from the loose point to the final gantry shall be carried out by the contractor, and payment shall be made on an admeasurement basis as per the rates quoted in the Price Schedules.

The Soil Investigation Report for the above-mentioned transmission lines shall be provided to the successful bidder after the award of the contract.

2. Specifications

- 2.1 All designs, equipment, materials and workmanship shall comply with and be tested in accordance with requirements of the specifications. Equipment or parts, which are not covered by the specifications, shall comply with rules, codes and regulations of the international electro-technical commission or approved National Standardizing bodies.
- 2.2 The general intent of these Specifications is to require the supply of equipment and materials equal or superior to those actually described herein and civil works, installation and commissioning of the transmission line. Unless otherwise stated, reference to the brand or manufacture, if make is only for the sake of comparison as type, design, character or quality of the equipment and materials desired and shall not be interpreted as eliminating other equipment and materials of equal performance, quality and durability.
- 2.3 The Technical Specifications / Provisions are provided separately in Volume – II of the Bidding Documents. The equipment/material shall be supplied in strict conformity of these specifications.

2.4 Type Test Requirements

- 2.4.1 The bidder will offer type tested equipment mentioned in NGC (formerly NTDC) Type Test Policy from one of the testing Laboratories given in Annexure-A of said Policy, in accordance with relevant NGC (formerly NTDC) Bidding Documents specifications/ IEC along with the bid.

All Type Test Certificate, reference list, etc. shall be in English language.

1.

2.

2.4

- 2.4.2 If Type Test Reports are not available or incomplete as per above mentioned NGC (formerly NTDC) requirement as per Type Test Policy of NGC (formerly NTDC), the bidder will submit tentative schedule of type tests along with unconditional undertaking(s) as required in clause ITB 11.2 (j) (vii) to carry out type tests within the quoted bid price without affecting the delivery/ completion period stipulated in Bidding Documents.
- 2.4.3 In case of failure to submit undertaking and/or tentative schedule of type tests along with the bid, such manufacturer shall not be accepted and bidder shall be bound to replace the same with acceptable manufacturer. In case of non-conformance, the bid may be rejected.
- 2.4.4 During evaluation, the Employer may seek any information and timelines regarding missing tests, which in his opinion, are required to be performed as per Specifications from the bidder(s) through post-bid clarification. In case of non-submission of the requisite missing data/ confirmation by the bidder within stipulated time, the bid may be rejected.
- 2.4.5 After signing of Contract Agreement, the bidder shall carry out the requisite type tests and execute Contract within stipulated time period. In case of failure, the Contractor shall be required to change the manufacturer as proposed by the Employer.
- 2.5 For "Specific Plant Data", refer to Schedule-G of Section 4 (Volume-I) of this Bidding Documents.
- 2.6 For EIA/EMP, please refer to <https://www.adb.org/projects/documents/pak-59002-001-eia>

3. Drawings

- 3.1 The Drawings are provided separately in Volume – III of the Bidding Documents.
- 3.2 The Contract shall be executed in strict conformity with the Drawings given or mentioned in Volume- II & III of the Bidding Document and the Contractor shall do no 'Work' without proper specifications, instructions and/or Drawings.
- 3.3 Specifications and/or drawings are intended to complement each other so that if anything is shown on the drawings as required but not mentioned in the specifications or vice versa, It shall be of like effect as if shown or mentioned in both. If any errors, omissions or discrepancies are found in the figures, specifications and/or drawings or, if any feature shall appear to the contractor to be indefinite or unclear, the same shall be referred to the Project Manager whose written explanation and/or clarification shall be obtained before proceeding with the work.
- 3.4 The Contractor shall submit to the Project Manager within 30 days of the issuance of the Notification of Award, for approval of the Project Manager, copies of all drawings, technical literature, data, operation and maintenance instruction books and /or manuals required under the specifications, in accordance with the Schedule given Supplementary Information and such other documents as required in the Technical Provisions and other provisions of the Bidding Document. Project Manager shall review the submittal and return one copy to the Contractor marked "Approved" / "Approved Except as Noted". If Project Manager deems necessary changes or modifications to be made therein, the same shall be returned marked "Returned for Correction" to the Contractor.
- 3.5 The Contractor after incorporating the desired changes in the drawings shall resubmit four (4) sets of the same to the Project Manager for approval. Two prints of which shall be stamped "Approved" by the Project Manager and returned to the Contractor for his record.
- 3.6 On completion of the Contract, the Contractor shall deliver to the Project Manager all approved drawings, technical literature, data in accordance with the Schedule given in Clause SI-06 which shows the work in the final or "As Built" condition. The said drawings and documents shall be permanent and non-fadable. In addition to above, two editable soft copies of above-mentioned final drawings made on Auto-CAD (latest version) on two separate CDs/USBs shall also be provided to the Project Manager.
- 3.7 The Contractor shall allow thirty (30) days for the Project Manager's approval of drawings in his schedule of work and in the time allowed for completion of the Contract. Extra time required for approval of drawings due to deficiencies in design or errors in submitted drawings shall be the responsibility of the Contractor and no extension in time will be allowed on this account.
- 3.8 All drawings and documents furnished by the Contractor in accordance with the Contract shall become the property of the Employer.
- 3.9 Wherever reference is made in the Technical Specification / Provisions to specific standards and codes to be met by the plant and materials to be furnished or tested, the provisions of the latest current edition or revision of the relevant standards or codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relates to a particular country or regions, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable. IEC Standard Equivalence will be preferred.
- 3.10 All correspondence, literature, drawings, name plates, diagrams, applicable data, equipment details, instructions and maintenance books and manuals, spare parts, books and descriptive data shall be in the English language only.

4. Supplementary Information

SI-01 ACQUAINTANCE WITH SITE

The Contractor shall be deemed to have inspected and examined all the line route and its surroundings and information available in connection therewith and before submitting his Bid, as to the form and nature thereof, including the subsurface conditions, the hydrological and climatic conditions, the extent and nature of Installation Services and Plant necessary for the completion of the Facilities, Right of Way (ROW), the means of access to the Site and the accommodation he may require and, in general, shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Bid.

SI-02 DESCRIPTION OF PROJECT

500 kV Double Circuit Quad Bundle Transmissions line for (i) Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) and (ii) Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km) shall be constructed and completed on turnkey basis. The scope includes design, manufacturing, supply, installation, testing, and commissioning in accordance with the contract documents.

The main objective of this transmission line project is to remove the system constraints for reliable dispersal of power from upcoming hydropower projects (HPPs) in the northern part of the network to the load centers in the mid country under normal and N-1 contingency conditions.

SI-02.1 Possession of Site

Save, in so far as the Contract may prescribe, the extent of portions of the Site of which, the Contractor is to be given possession from time to time and the order in which such portions shall be made available to him and subject to any requirement in the Contract as to the order in which work shall be executed. The Employer shall give to the Contractor possession of as much of the area designated and defined as the Site and shown on the Drawings as may be required to enable the Contractor to commence and proceed in accordance with the program given by the Contractor and agreed by the Employer. Otherwise in accordance with such reasonable proposals of the Contractor as he shall, by notice in writing to the Employer, make and will, from time to time as work proceeds, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with due dispatch in accordance with the said program or proposals (as the case may be).

SI-02.2 Location of Site

The proposed Site shall comprise of:

500 kV Double Circuit Quad Bundle Transmissions line for (i) Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) and (ii) Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km) and line traverses through Fateh Jang in Attock District, Kot Sarang in Talagang District, Katha Sagral in Khushab District, and Sillanwali in Sargodha District, all located in Punjab.

SI-03 SITE CONDITIONS

SI-03.1 Site Conditions and Meteorological Data

- (1) The site is subject to dust storms, thunderstorms, smog, and the presence of insects and vermin. Particular care must therefore be taken in the design and packing of the Plant to prevent the ingress and impact of wind, dust, insects, and vermin, and to ensure adequate resistance to potential damage caused by them.
- (2) Employer does not guarantee the correctness of any data provided herein nor any interpretations, deductions or conclusions relative to subsurface conditions at Site. The Bidder/Contractor must form his own opinion of the character of the work and of the materials to be excavated. He must make his own interpretations, and satisfy himself by his own investigations and research regarding all conditions affecting the work to be done. The Bidder/Contractor must assume all responsibility for deductions and conclusions as to the nature or conditions of the materials to be excavated and of doing other work affected by the geology at the Site.

SI-04 MATERIAL AND WORKMANSHIP

SI-04.1 Material And Workmanship

- (1) All materials, manufacturing, testing and workmanship of Plant shall comply with the requirements of the Contract Documents. Plant or parts which are not covered by these Specifications shall comply with the applicable standards, rules, codes and regulations of the internationally approved standardizing bodies.
- (2) The intent of these Specifications is that Facilities under this Contract should be equal to or superior than those actually described herein. Reference to a brand or manufacture, if made, is only for the sake of comparison as to type, design, character or quality of the Plant or parts and materials described and not be interpreted as eliminating other Facilities of equal performance, quality and durability.
- (3) In choosing materials and their finishes due regard shall be given to the conditions prevailing at Site.
- (4) All matters relating as to the acceptability or otherwise of the Plant offered under this Contract shall be decided by the Project Manager whose decision shall be final.

SI-04.2 Extent of Specifications

The extent of the Contract Documents is to provide for the Facilities herein specified to be fully complete in every detail for the function designated. All Facilities which are not specifically mentioned in the Contract Documents, but which, in the opinion of the Project Manager, are usual or necessary for the satisfactory completion of the Facilities shall be deemed to be included in the Contract and shall be provided by the Contractor without extra cost to Employer.

SI-05 PLANT AND INSTALLATION SERVICES BY CONTRACTOR

The scope of work includes the Design, Manufacture, Supply, Installation, Testing & Commissioning of 500 kV Double Circuit Quad Bundle Transmissions line for (i) Looping In/Out of 500 kV Ghazi Barotha – Rawat Single Circuit Transmission Line at Faisalabad West Substation (Approx. 280km) and (ii) Looping In/Out of 500 kV Ghazi Barotha – Rawat Transmission Line (both circuits) at Islamabad West Grid Station (Approx. 6+6 km), as per volume – II, technical specification and volume – III, Specification drawings of these bidding documents.

The Facilities, under the Scope as mentioned in Article 1 hereof, to be provided under these specifications on the rates provided in the price schedule shall include, but not limited to the following:

1. Clearing right -of-way;
2. Alignment of line route (diverted portion).
3. Detailed survey using latest techniques of RTK (diverted portion).
4. Sub-soil investigation along the route including Laboratory tests (confirmatory).
5. Preparation of plan & profile drawings, tower spotting etc. using PLS-CADD software (diverted portion).
6. Preparation of construction structure list.
7. Material calculation including detailing of tower fabrication drawings.
8. Ordering/Procurement of the finally required quantity of transmission line materials like towers including stub angles (to be procured as per tower fabrication drawings), conductor and OPGW along with associated equipment & hardware, insulators and hardware strings, accessories, spacer dampers & stock bridge dampers, grounding materials and required spare parts including hydraulic compressors with dies etc.;
9. Manufacturing, testing, furnishing, packing, insuring, delivery to site & storing the Goods.
10. Surveying of tower site, tower staking and establishing correct location of footings.
11. Excavation, grading, blasting and backfill, installing tower grounding as per Technical Provisions and Specification drawings, including disposal of surplus excavated material.
12. Furnishing materials for and constructing reinforced concrete tower foundations including installation of Stub Angles as per Technical Provisions and Specification drawings.
13. Loading of transmission line materials from the site stores, transporting and distributing/unloading at the sites of installation;
14. Erection of steel towers;
15. Installing of insulator assemblies for conductors;
16. Stringing of conductors, OPGW by controlled tension method complete with all accessories and dampers;
17. Installing tower signs (Danger signs, Number signs, Aerial markers etc.), anti-climbing devices complete with barbed wire and bird guard(s) on Towers;
18. Provision of slope / erosion protection walls, gabions and gravel blankets;
19. Cleaning-up of right-of-way;
20. Testing and commissioning;

21. Provision of Spare Parts in accordance with the requirements; and
22. Any other item which is not included here but is necessary for integrated operation of the Transmission Line as advised by the Project Manager.

NOTE:

- (1) The foundation type of individual towers for construction is indicative and the same shall be finalized and issued by the Project Manager after the completion of sub-soil investigation and consequent laboratory testing.
- (2) The Employer shall not give any equipment/T&P for survey, foundation, erection and stringing to the Contractor for this project. It is also mentioned that the stringing equipment/T&P and other construction equipment/T&P shall be arranged by the Contractor.
- (3) The Contractor is responsible to mobilize sufficient numbers of crews for surveying, foundations, tower erection and stringing each equipped with T&P complete in all respects for smooth execution of each activity. Contractor is responsible for timely completion, to adhere to the project schedule and ensure that the sufficient resources are available with the crews before commencement of each activity. Detailed methodology and list of T&P should be got approved from the Project Manager well before the commencement of each activity. The detail of construction equipment/T&P to be arranged/imported from abroad by the Contractor must be furnished in his Bid.
- (4) In case Contractor fails to arrange the required numbers of crews along with requisite T&P in good working condition for inspection at site prior to commencement of respective activity, the Employer has the right, in addition to withhold current payment, terminate the Contract and forfeit the Performance Security at any stage and to get executed the balance Installation Services through other contractors at the Contractor's risk and cost. At Bidding stage the Bidder shall submit an undertaking to this effect on the "Form: Undertaking for supply of equipment required for execution / construction of the project" provided in Section 4-Bidding Forms.
- (5) The vehicles to be delivered in accordance with Schedule No. 4 (iii) of the Price Schedule shall be supplied to the NGC (formerly NTDC) offices mentioned in price schedule and Head Office of the Project Manager by the Contractor within forty five (45) days from the date of signing of the Contract, failing which the Contractor shall arrange free of cost, vehicles of the same type/size and of acceptable condition for the Employer and the Project Manager till such time the vehicles specified are delivered.

SI-06 DRAWINGS**SI-06.1 Drawings in Contract****SI-06.1.1 Specification Drawings**

The specification drawings contained in Volume – III of the Bidding Documents show the scope of work to be performed by the Contractor. The specifications drawings provided with bidding documents are for reference to be used for filling the Schedule of Prices only. These Drawings shall not be used for the execution of the Work unless the Project Manager gives specific instructions for such use.

SI-06.1.2 Contractor's Bid Drawings

The Contractor's Bid drawings are the drawings prepared by the Contractor for bidding purposes, and shall be part of his Bid.

The specification drawings and Contractor's Bid drawings shall not be used for execution of the Works unless specific instructions for such use are given by the Project Manager.

SI-06.1.3 Approved Drawings

The work shall be performed in accordance with the approved drawings in terms of Clause 20 of the General Conditions of Contract.

SI-06.2 Drawings and Other Data to be furnished by the Contractor

All drawings and other data shall be in English language and all dimensions shall be in Metric System. Symbols shall be in accordance with IEC standards. All drawings/data submitted for approval shall conform to ISO paper sizes A0 to A4. All drawings shall be clearly marked:

- National Grid Company of Pakistan (NGC)
- Name of T/Line

The Contractor shall submit detailed civil, electrical and mechanical drawings for approval by the Project Manager, in accordance with Sub-Clause 20.3 of the General Conditions of the Contract, within the time schedule to be submitted under Sub-Clause 18.2 of General Conditions of Contract.

SI-06.2.1 Line Route, Outline, Plant and Equipment Drawings and Specific Plant Data

The Contractor shall submit the line route for the diverted section (if required), outline drawings, drawings and Specific Plant Data of all the installation services and Plant and Equipment within thirty (30) days after signing of Contract for approval of the Project Manager, together with overall and handling weights and dimensions of the Plant & Equipment to be provided under the Contract.

SI-06.2.2 Detail Drawings

The Contractor shall submit, detail drawings as required herein and in accordance with schedule to be made by the Contractor according to Sub-Clause 18.2 of General Conditions of Contract. All computations, drawings, functional description of Plant and Equipment, schemes and other information required to check adequacy of the design shall accompany with the drawings submitted for approval. The drawings shall be complete in all respects, shall have been reviewed and checked by the Contractor and shall be submitted in due time and in logical order to facilitate proper coordination.

SI-06.2.3 Drawings, Data and Instruction Manuals

The following detail drawings shall be submitted in both soft and hard form within the time stated herein and above in accordance with the Schedule stipulated in Sub-Clause 18.2 of General Conditions of Contract:

- 1) **Steel Towers**
 - i. Detail fabrication and shop drawings of steel towers material including gusset plates & bolts etc;
 - ii. Tower single line diagram/outline drawing indicating dimensions (height, width) of overall tower & its parts (basic body, leg & body extensions, cross-arms, tower peaks etc.) and also indicating outline of tower insulator strings & their position on tower and arrangement of circuits on tower.

- iii. Bill of quantity for required tower material shall indicate quantity and information related to size of angles and tower hardware, material type, unit and total weight of black section and weight after galvanization;
- iv. Specific Plant Data;
- v. Packing details;
- vi. Any other information and drawing which may be required by the Project Manager;

2) Conductor and OPGW along with associated equipment

Detail drawings of reels and Specific Plant Data, test program indicating arrangement & details of all tests to be carried out and their tentative schedule, complete set of all type test reports (even if carried out in earlier contract), packing details/drawings and other drawings/data required to be submitted in accordance with the Specifications and any other information which may be required by the Consultant or information which the Contractor understands that it will be deemed necessary for smooth execution of project.

3) Accessories

Dimensional drawings of accessories, Specific Plant Data sheets, packing details/drawings, installation instructions, test program indicating details of all tests to be carried out, their tentative schedule, type test reports and any other information which may be required by the Consultant or the information which Contractor understand that it will be deemed necessary for smooth execution of project.

4) Spacer and Stock bridge Vibration Dampers

Dimensioned drawings of the dampers, 3D drawing of dampers, Specific Plant Data sheets, packing details/drawings, installation instructions, spacing data, test programme indicating details of all tests to be carried out, their tentative schedule, complete set of all type test reports (even if carried out in earlier contract) and any other information which may be required by the Consultant or the information which Contractor understand that it will be deemed necessary for smooth execution of project.

5) Insulators & Hardware

Dimensioned drawings of insulators & hardware, detail drawings of insulators, hardware assemblies & hardware components drawings, 3D drawings of hardware assemblies & components, Specific Plant Data sheets, packing details/drawings, test programme indicating details of all tests to be carried out, their tentative schedule, complete set of all type test reports of insulator & hardware (even if carried out in earlier contract) and any other information which may be required by the Consultant or information which the Contractor deems necessary for smooth execution of project.

The submitted drawing of insulator must indicate below information:

- a. Drawing number and revision
- b. Date of issue
- c. Scale
- d. Type and/or Catalogue number
- e. Principal dimensions with manufacturing Tolerances
- f. Skirt spacing with tolerances

- g. Surface area of top and bottom porcelain body (separately)
- h. Electrical and Mechanical (E&M) strength and Electromechanical Failing Load
- i. Tension proof load
- j. Impact Strength
- k. Electrical Data
 - Dry Power Frequency withstand voltage (kV)
 - Wet Power Frequency withstand voltage (kV)
 - Dry Lightning Impulse withstand voltage (kV)
 - Minimum Power Frequency Puncture Voltage (kV)
 - Critical impulse flashover-Positive
 - Critical impulse flashover-Negative
 - Power Frequency electric arc voltage (s/kA)
 - Radio influence voltage 1 MHz (μ V)
- l. Minimum Creepage Distance with positive tolerance
- m. Minimum dry arcing distance with positive tolerance
- n. Height of porcelain/glass shell (measured from base of porcelain/glass cap to bottom of outermost rib)
- o. Metal hardware component standard and grade
- p. Net Weight of insulator unit
- q. Zinc Coating Thickness on ferrous (cap & pin) parts
- r. Cap & pin Material
- s. List of material
- t. Connecting length with tolerance
- u. Colour of porcelain body & RTV Coating, if applied
- v. All Markings

6) Installation Services

- i. Route map, plan & profile drawings for any diverted line route (if required) showing spotted towers, construction structure list, soil investigation reports (if required) and other data as required by the Project Manager.
- ii. Foundation drawings for conventional as well as pile foundations and stub joint arrangement drawings.
- iii. Drawings (if required) indicating crossings of transmission line over Railway tracks and Highways along with foundation design calculations.
- iv. Specifications and details of concrete mix ratio and aggregate grading.
- v. Sag-templates for tower spotting for any diverted line route.
- vi. Sag-tension and stringing tables for construction purposes.
- vii. Sets of construction drawings showing assembly & fabrication of towers, insulators & hardware assemblies, conductor, OPGW, accessories and spacer & stock bridge vibration dampers etc.
- viii. Drawings for access roads; design data and drawings for suspension bridges and cable car/rope way; and drawings for slope/erosion protection walls.
- ix. Drawings for slope/erosion protection walls.
- x. Any other information and drawing which may be required for construction purposes.

SI-06.2.4 Data Other Than Drawings

All of the applicable requirements of this Clause with reference to the drawings to be prepared by the Contractor shall apply equally to catalogues, illustrations, printed specifications or other data submitted for approval.

SI-06.3 Submission and Approvals**SI-06.3.1 Drawings/data for Approval**

Drawings/data for approval shall be distributed to addresses and in number as specified in Clause SI-06.3.6 hereof.

All drawings / Data submitted for approval shall be provided with a blank white space, approximately 90mm height by 120mm with width, near the lower right-hand corner to be used for notations by the Project Manager.

SI-06.3.2 Approval of Drawings/data

- (1) All Drawings submitted for Approval will be reviewed and stamped by the Project Manager and will be marked "APPROVED" "APPROVED EXCEPT AS NOTED" or "RETURNED FOR CORRECTION" on the relevant drawings. One print will be returned to the Contractor. The other shall be retained by the Project Manager for his own use and for the use of the Employer and shall serve as the Master Copy and shall prevail in case of any doubt or discrepancy subsequently arising.
- (2) If the drawing is returned to the Contractor stamped "APPROVED" he may immediately proceed with the Works. Any drawing marked "APPROVED" by the Project Manager shall be known as an "Approved Drawing".
- (3) If the drawing is returned to the Contractor stamped "APPROVED EXCEPT AS NOTED" he may proceed with the Facilities taking into account the corrections and comments noted on the drawing. The Contractor shall revise the drawings as required and resubmit them in the same route as before for record purposes.
- (4) If the drawing is returned to the Contractor stamped "RETURNED FOR CORRECTION" he shall not proceed with the Works but shall make the changes and corrections or prepare new drawings and resubmit the revised drawing to the Project Manager for approval at no change in price or Schedule. Resubmitted prints and calculations will be subject to the same routine as before. Time required for such revisions and re-submittal of drawings or calculations will not entitle the Contractor to any extension in contract time.
- (5) If the Contractor does not agree with exceptions taken by the Project Manager, the Contractor shall state in his letter of re-submittal his reasons for not complying with the Project Manager exceptions. Revision number and date and description of change shall be shown on all drawings or calculations revised.
- (6) Methods of packing, marking and shipping shall be submitted to the Consultant for review and acceptance. Before any shipment is made, the Contractor shall get the packing detailed drawings approved by the Consultant.

SI-06.3.3 Work Prior to Approval

Any work done prior to the approval of drawings/data shall be at the Contractor's risk. The Project Manager shall have the right to request additional details and to require the Contractor to make any change in the design, which are necessary to conform to the provisions and intent of these Specifications and such changes shall be made without additional cost to the Employer. The approval of the drawings/data by the Project Manager shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Approval by the Project Manager of the Contractor's drawings/data shall not be held to relieve the Contractor of the obligations to meet all the requirements of these Specifications or of the responsibility for the correctness of the Contractor's drawings/data or for correct fit of assembled Plant furnished by the Contractor.

SI-06.3.4 Sequence of Submission

The sequence of submission of all drawings shall be such that all information is available for checking each drawing when it is received.

SI-06.3.5 Approved Drawings and Revision

All approved drawings and data shall form a part of the Contract. If revisions are made after a drawing has been approved, the Contractor shall furnish for approval additional copies specified for the initial submission, subsequent to each revision.

SI-06.3.6 Distribution of Drawings and Documents

The drawings and documents (as applicable) shall be submitted to Project Manager/Consultant within the time given in the Contract or within such reasonable time as the Project Manager/Consultant may require, and in the number as specified hereunder.

Documents	Consultant		Project Manager	Total
	Head Office	Site Office		
Drawings for approval	3	-	1	4
Approved Drawings	2	2	2	6
Drawings for information	2	1	1	4
Schedules, specifications and other documents/data	2	1	1	4
Construction Drawings	2	6	2	10
Marked up Drawings	-	2	-	2
Hard Copies of As-Built Drawings	2	-	4	6
Reproducible transparency As-Built Drawings	1	-	1	2
Soft Copy of As-Built Drawings on computer compact diskette (CD/USB) using AutoCAD software	1	-	1	2
Codes and standards	1	1	1	3
Instruction Manual for Approval	2	-	1	3
Approved final Manuals	1	2	2	5
Approved test Procedure	1	2	2	5
Manufacture progress information	2	1	2	5
Insurance Certificates	1	1	2	4
Receiving reports	1	1	2	4
Damage reports	1	1	2	4
Erection progress Reports	1	1	2	4
List of Construction Stringing and Erection Equipment	1	1	1	3
Operation & Maintenance Manual	3	-	12	15
Project Completion Reports	3	-	12	15
Correspondence to the Project Manager	1	1	1	3
Correspondence to the Consultant Head Office	1	1	1	3
Correspondence to the Consultant Site Office	1	1	1	3

SI-06.3.7 As-Built Drawings (Record Drawings)

In the event of the Plant or any part thereof being, with the approval of the Project Manager, properly built-in or installed otherwise than in accordance with the Approved Drawings, then the Contractor shall ensure that the Approved Drawings are marked up to show the conditions of the Plant as installed and at least two (2) copies of such marked up drawings shall be submitted by the Contractor to the Project Manager for approval. One copy of each of marked up drawings approved by the Project Manager shall be returned to the Contractor by the Project Manager and these shall be used for the preparation of the As-Built Drawings pursuant to Clause 20 of the General Conditions of Contract.

A further copy of each of the marked-up drawings shall be retained by the Project Manager for the purpose of checking the As-Built Drawings.

The Contractor shall furnish to the Project Manager six (06) complete sets of all Record Drawings and Data prior to issue of the Operational Acceptance Certificate.

The Contractor shall also furnish to the Project Manager two (02) Mylar Polyester Base full size reproducible of all final record, which in the opinion of the Project Manager may be required for the erection, construction of Civil Work, Operation and Maintenance, for identification of parts and for ordering replacement parts and materials. The Mylar reproducible shall be 50/70 microns thick, double matte film, wash off film, printed on the front.

In addition to above the Contractor shall provide two (2) sets of As-built Drawing (soft copies) of all final Record which, in the opinion of the Project Manager, may be required for the erection, construction of civil Work, operation and maintenance, for identification of parts and for ordering replacement parts and materials, on Pen Drive using AutoCAD software.

The as built drawings, specific works data and associated documents shall be in accordance with the details given below:

1) Steel Towers/Poles

- i. As built single line diagram/outline drawings of towers & accessories (in PDF format & AutoCAD format)
- ii. As built detailed tower fabrication drawings (in PDF format & AutoCAD format)
- iii. As built shop drawings of towers (in PDF format & AutoCAD format)
- iv. 3D drawings of all tower parts & components that mate with hardware/accessories, clearly indicating all relevant dimensions (in PDF format & AutoCAD format).
- v. As built detailed Bill of quantities (BOQ) for each tower and its accessories. This should include quantity and information related to size of angles and tower hardware, material type, unit and total weight of black section and weight after galvanization.
- vi. As built list of angle sizes used for each type of tower and properties of angle sizes.
- vii. Specific Plant Data sheets.
- viii. Complete set of factory acceptance test reports.
- ix. Complete set of all type test/prototype test reports (if applicable)

- x. Packing Lists
- xi. Any other information and drawing which may be required by the Consultant.

2) Conductor and OPGW along with associated equipment

- i. As built detailed drawings of Reels (in PDF format & AutoCAD)
- ii. 3D drawings of all parts of reels that mate with tensioner/puller equipment (in PDF format & AutoCAD format).
- iii. Specific Plant Data sheets.
- iv. Complete set of factory acceptance test reports.
- v. Complete set of all type test reports (even if carried out in earlier contracts)
- vi. Packing Lists
- vii. Any other information and drawing which may be required by the Consultant.

3) Accessories

- i. As built detailed dimensional drawings (in PDF format & AutoCAD)
- ii. Specific Plant Data sheets.
- iii. Complete set of factory acceptance test reports.
- iv. Complete set of all type test reports (even if carried out in earlier contracts)
- v. Packing Lists
- vi. Any other information and drawing which may be required by the Consultant.

4) Insulators and Hardware

- i. Detailed outline drawings of hardware assemblies and detailed hardware component drawings (in PDF format & AutoCAD format)
- ii. Detailed drawings of insulators (in PDF format & AutoCAD format)
- iii. 3D drawings of hardware assemblies and components (in PDF format & AutoCAD format).
- iv. Detailed Bill of quantities (BOQ)
- v. Specific Plant Data sheets.
- vi. Complete set of factory acceptance test reports.
- vii. Complete set of all type test reports (even if carried out in earlier contract)
- viii. Packing Lists

- ix. Any other information & drawing which may be required by the Consultant.

5) Spacer Dampers and Stockbridge Vibration Dampers

- i. Detailed drawings of dampers (in PDF format & AutoCAD format)
- ii. Vibration studies and damper placement charts
- iii. 3D drawings of dampers (in PDF format & AutoCAD format).
- iv. Detailed Bill of quantities (BOQ)
- v. Specific Plant Data sheets.
- vi. Complete set of factory acceptance test reports.
- vii. Complete set of all type test reports (even if carried out in earlier contract)
- viii. Packing Lists
- ix. Any other information and drawing which may be required by the Consultant

In addition to SI-06.3.6, one complete set of all the approved as built drawings and data shall be submitted on Pen Drive to Chief Engineer (T/L) Design NGC.

SI-06.3.8 Material Reconciliation Report

The Contractor shall prepare complete as built profile and shall submit it for the review and approval of Project Manager and Consultant. The as built profile then shall be submitted to Chief Engineer (T/L) Design NGC.

The Contractor shall also prepare Material Reconciliation Report in accordance with the approved as built profile and shall submit it for the review and approval of Project Manager and Consultant. The approved material reconciliation report then shall be submitted to Chief Engineer (T/L) Design NGC.

SI-06.3.9 Ownership of Drawings and Data etc.

All the drawings, details, bill of materials and any other information or documents furnished by the Contractor shall become the property of the Employer and shall be non-returnable. The Employer will have the right to use this property.

SI-07 APPROVAL OF FACILITIES

As soon as practicable after the Award of Contract, the Contractor shall submit for the approval of the Project Manager, specifications, drawings, catalogues, diagrams and other descriptive data for all materials and components of equipment which the Contractor proposes for use under this Contract. For certain materials and Plant/Goods, data may be required to be submitted in accordance with a detailed form furnished by the Project Manager. Items submitted shall be properly labeled to indicate Employer, the Contract number, Project, manufacturer name, source of supply, Contract Item number, and other data required by the Specifications. All items shall be submitted in sufficient time, but not later than ninety (90) days prior to use thereof, to permit proper consideration and action thereon without delaying the approved time schedule. Item sent for approval shall be shipped prepaid by the Contractor to the Project Manager, and the Contractor shall give the Project Manager advance notice in writing of all

items shipped. Reference in Specification to the Product of a specific manufacturer is intended only to establish a standard of quality, durability and design and shall not be construed as limiting competition. Product of other manufacturers will be acceptable provided such products are in the opinion of the Project Manager equal to that specified.

SI-08 STANDARDS AND TYPICAL DESIGN

SI-08.1 General

The Specifications cite or imply International Standards and typical design for Work, Plant and materials. Other equivalent Standards and typical designs are equally acceptable provided that they in no way detract from the quality, safety, and operability of the Work, Plant and materials furnished. However, when standards or typical design other than those cited or implied are offered by a bidder, he shall set forth in his bid the alternative standards proposed so that a direct comparison can be made before Contract Award. Each specific difference from the Specifications shall be clearly indicated by the bidder. If the bidder sets no alternatives forth, it will be assumed that Work, Plant and materials will be in accordance with the International Standards and typical design as cited or implied in the Specifications.

Where the documents provide requirements for materials or Plant or Work by specifying a standard such as, for example, one of the international standard organizations, which has its origin in one country, it is not the intention to restrict the requirements solely to that standard and that country. Other standards, including standards of other countries will be accepted provided the requirements thereof in the sole opinion of the Project Manager are at least equal to the requirements of the standards specified. The Bidder may propose to the Project Manager an equivalent standard other than that specified, in which case he shall submit the proposed standard and all other information required by the Project Manager and shall submit written demonstration that his proposed standard is equivalent to or superior to the one specified herein. The submission must be made in English language. Moreover, the bidder shall also supply copy of the latest revision of the standards used in his design.

SI-08.2 Abbreviation of Standards

Standard specifications and codes of the following listed authorities wherever cited herein are referred to by use of the abbreviations shown below. All Plant/Goods shall be designed, manufactured and tested generally in accordance with the latest revision of the standards laid down by the institutions or other approved institutions, except where specifically directed otherwise:

	<u>Name of Authority</u>	<u>Abbreviation</u>
1.	American National Standards Institute, Inc. 1430 Broad-way, New York, New York 10018.	ANSI
2.	American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.	ASTM
3.	British Standards Institution British Standard House 2 Park Street, London,	BS

W 1 England.

- | | | |
|----|---|------|
| 4. | Deutsche Industrie Normen. | DIN |
| 5. | International Electro-technical Commission, Geneva, Switzerland. | IEC |
| 6. | Institute of Electrical and Electronic Engineers Inc.
345 East 47th Street,
New York, New York 10017. | IEEE |
| 7. | National Electrical Manufacturers Association 155 East 47th Street,
New York, New York 10017. | NEMA |
| 8. | Japanese International Standards,
Tokyo, Japan. | JIS |

Copy of specifications, codes or standards of the above organizations may be obtained at the addresses shown above.

SI-08.3 Applicable Standards and Codes

- (1) All Plant, materials, Work and design shall be generally in accordance with latest revision of the standards specified in the Technical Provisions except where specifically directed otherwise. If these Specifications conflict with any or all the standards stated in the Technical Provisions, these Specifications shall have precedence and shall govern.
- (2) In case deviation from the above standards is minor, the approval of the Project Manager may be given to the use of other national standards prevalent in the country of manufacture. No departure from the standard specified will be considered after the Contract has been awarded unless specific authorization is requested in writing from the Project Manager.

SI-09 PORT OF ENTRY AND DISEMBARKATION

The Contractor would have the option to use either Karachi Port or Port Muhammad Bin Qasim or Gawadar Port or all of them, as the port(s) of entry and disembarkation, at his own risk and costs. For the purpose of clarification, the term "Wharf at the Port of Karachi" wherever used throughout this document shall mean:

- a) Wharf at the Port of Karachi, and/or
- b) Wharf at the Port of Muhammad Bin Qasim
- c) Wharf at the Port of Gawadar

SI-10 PACKING AND MARKING

SI-10.1 Packing

- (1) The Contractor shall prepare and pack all parts of the Plant and Equipment for shipment in accordance with the requirements of the Contract Documents and in the best possible manner to withstand damage or loss from repeated handling and extremes of climate during transport and storage at Site. All parts of the Plant and Equipment shall be packed so as to guarantee safe transportation of the Plant and Equipment to the Site under any conditions and limitations which may be encountered. The manner of packing shall be such that it protects the Plant and Equipment against breakages, damages and losses from the factory until its arrival at its final destination at the Site.

- (2) The final packing shall be such that the weight and dimensions of packages are within reasonable limits in order to facilitate handling, storage and transportation.
- (3) Tower members shall be bundled un-assembled into like-member bundles. No bundle or container shall weigh more than 900 kg. Prior to commencement of bundling, the Contractor shall submit his proposed bundling schedule to the Project Manager for approval. The bundling schedule shall list the number of members per bundle and the weight of each bundle.

All members of each bundle shall be wired together (at both ends of the bundle) by passing a non-corrosive steel wire through the holes that are punched in the members. The wire shall be minimum No. 20 metric wire gauge and shall be completely looped and the ends shall be twisted together and tightened securely. Bundles shall be strapped with heavy gauge (32 mm x 1 mm) non-corrosive steel strapping. Following is a guide to the number of steel straps and is meant to be a minimum requirement only, and therefore does not limit the number of straps should more be deemed necessary by either the Contractor or the Project Manager.

Member lengths of 0.5 m to 1.5 m - 2 straps

Member lengths of 1.5 m to 2.5 m - 3 straps

Member lengths over 2.5 m - 4 straps

Small members (less than 0.5 m length), gusset plates, clip angles, accessories, etc. shall not be bundled or shipped loose. Such members shall be wired together in small lots of like members and placed in strong wooden boxes made of nominal 25 mm lumber, dressed on the outside for marking purposes. Construction shall be of an interlocking type with reinforced corners and edges, (i.e. double lumber). Boxes shall be nailed together with ringed, gummed, spiraled or nails, only, and any nails that protrude into the box interior shall be clinched. Boxes shall be lined with a waterproof paper. No box shall be smaller than 0.028 Cu. meter in volume nor shall exceed 90 kg gross weight, and shall be steel strapped. All boxes containing identical items shall be of a uniform size.

The Conductor shall be shipped in matched sets of twenty-four (24) in nominal lengths of 3200 meters on non-returnable reels having mixture of steel and wood. The difference between the shortest and longest length in a set shall not exceed 46 meters. The average length between sets may vary $\pm 5\%$ from the nominal length of 3200 meters. The reels shall be designed for nominal tension stringing operations and shall conform to standard laid out by Aluminum Association of USA.

The drums (reels) of the conductor shall be wrapped with a moisture resistant protective covering. The inner flanges of the reels shall be lined with moisture resistant solid fiberboard.

The two outer layers of the conductors shall be interleaved and the outer layer covered with moisture resistant paper. One layer of waterproof paper must be inserted underneath the last layer of conductor on the drum to avoid sliding against the inner layer. Moreover, the conductor shall be tied at the beginning of the last outer turn to one flange with a suitable string and the outer end stapled to the outer flange to avoid the conductor moving from the correct position. A protective covering of a single layer of a moisture resistant solid fiberboard, secured with steel banding, shall be wrapped overall.

The reels shall be so constructed to withstand normal loads due to tension stringing operations and they shall be sufficiently sturdy to withstand the

additional handling incident to ocean shipment and field of construction. The wood should be seasoned to shrinkage and warping. The timber to be used shall be new, dry, properly seasoned and suitably treated to withstand changes in temperature and humidity without deterioration or shrinkage. The reels should be treated with preservative to protect against moisture, rot fungus, termite and insect attack.

The reels shall be wood lagged, the lagging to be secured with two steel bands. The steel bands shall be intermittently stapled to the lagging.

The OPGW shall be shipped on non-returnable wooden reels in nominal length of 5000 meters per reel or as the length will be decided by the Contractor in accordance with the stringing set up. However, the Contractor may at his own option ship the OPGW on non-returnable reels having mixture of steel and wood and the length suitable to site requirement, but no benefit would be given on this account.

After factory inspection the inner end of the cable shall be fitted with a suitable cap to ensure water tightness. The outer end shall be fitted with a watertight head compatible with cable pulling.

The OPGW reels shall be wrapped with a moisture resistant protective covering. The inner flanges of the reels shall be lined with the moisture resistant solid fiberboard. The two outer layers of OPGW shall be interleaved and outer layer covered with moisture resistant paper. A thermal pad shall be placed over the outer spirals and the thermal protection shall be at least equivalent to that obtained with an aluminum sheet covered by 10mm cellular polyethylene. A protective covering of a single layer of moisture resistant solid fiberboard, secured with steel banding shall be wrapped overall. The reels should be sturdy enough to withstand the additional handling incident to ocean shipment, overland transport and stringing loads. The wood should be seasoned to shrinkage and warping. The reels should be treated with preservative to protect against moisture, rot fungus, termite and insect attack. The reels shall be wood lagged, the lagging to be secured with two steel bands. The steel bands shall be intermittently stapled to the lagging.

All the metal parts of reels shall be properly coated with good quality anti-corrosive paint.

The hardware, accessories, spacer & stock bridge vibration dampers of conductor & OPGW and grounding connectors shall be packed in wooden boxes secured with steel bands strong enough to withstand the strains of overland and overseas transportation.

Bolts, nuts and washers shall be packed in wooden boxes or kegs in bulk quantities. Boxes shall be nailed together with ringed, spiraled or gummed nails only and any nails that protrude into the box interior shall be clinched. Boxes shall be lined with a waterproof paper. A surplus of five (5) percent of nuts, bolts and washers shall also be packed. Boxes or kegs shall contain only one type and size of items. Mixing of items including nuts, bolts and washers shall not be permitted.

The ground wire shall be shipped on non-returnable wooden reels in nominal length of 2000 meters $\pm$ 5% per reel.

Ground rods shall be packed in bundles and bound with steel straps. The packing shall be strong enough to protect any surface or part from damage during transportation and storing.

The insulators shall be packed in accordance with ANSI standard C29.2

latest edition. The packing shall be palletized and each pallet shall not contain more than 120 units. Packing should be good for sea shipment, inland handling and inland transportation. Each pallet shall have lifting arrangement.

- (4) Before any shipment is made, the Contractor shall get the packing detailed drawings approved by the Project Manager.

SI-10.2 Lifting

The method of lifting, type of equipment and type of slings, used for handling the conductor/OPGW reels as well as wooden boxes are subject to approval by the Project Manager. The reels are so constructed as to be supported either on an axle through the arbor hole or by the reel flange. When the reels are lifted by an axle supported from above, a spreader bar must be employed to prevent reel damage by inward pressure on reel flange. In no case shall metallic slings or other metallic equipment shall come in contact with conductor or OPGW or ground wire.

SI-10.3 Slings

If the use of slings is necessary, these shall be of a flexible type and preferably manila rope or other non-metallic materials. The use of steel wire, mesh or chain link slings is prohibited unless they are covered with rubber hose or some similar material.

SI-10.4 Marking

SI-10.4.1 Identification Marking

- (1) All members, parts, units or components of the Plant and Equipment shall be plainly die-indented with a number to identify the member, part, unit or component itself and with a letter to indicate the type of Plant and Equipment in accordance with approved drawings.

The identification marking shall be plainly legible and durable and shall be so located that the number or letter is not obscured by other member, part, unit or component when in its assembled position. All the marking on ferrous part or unit shall be made before galvanizing.

- (2) Each crate, case, box, package or bundle shall have labels and or tags made from strong waterproof material and marked in indelible and non-fade-able ink securely attached hereto. These labels or tags shall indicate at least the name of the Project, the Consignee and the manufacturer, the type of Plant and Equipment or component and the quantity it contains so that it can be easily checked upon delivery. A packing list shall be included in each crate or box.
- (3) Each package delivered under the Contract shall be consecutively numbered and shall also be marked with code number or other identification to be approved by Employer/Project Manager so that various components of the Plant and Equipment which are shipped, disassembled and which may not be interchangeable can be identified, collected and stored at the Site together. Additional information and or color coding that may reasonably be required by Employer/Project Manager to facilitate identification, shipment

to stores or site handling and storage will also be provided.

- (4) All boxes weighing in excess of 500 kilograms shall be adequately marked for straining and lifting. Whenever necessary the boxes shall be provided with lifting hooks attached by means of vertical rods secured to strong bottom supports.

SI-10.4.2 Container Marking

In addition to labels and marking indicated above all packages, bundles, containers cases or boxes shall be clearly and boldly marked on two opposite sides and on the top and all reels on both sides as follows:

Consignee:

Manager (Custom Clearance & Logistics),
NGC, Bungalow No. 44/N-1, Block-6,
PECHS Karachi, Pakistan.
Phone# 021-99332548
Fax# 021-99332549
E-mail: ccl.ntdcl@gmail.com

Ultimate Consignee:

Chief Engineer (EHV), North NGC, Islamabad
WAPDA Mega Hydro Project Building, Kashmir Chowk, Club Road, Islamabad
Phone # +92-051-9214564
Fax # +92-51-9214563
E-Mail: ceehvisd@ntdc.com.pk

Destination	-----
Contract No.	-----
Weight And Dimension	-----
Name of Project	-----
Serial Number	-----
Inscription	"NGC (formerly NTDC)"

SI-11 TRANSPORTATION OF PLANT

SI-11.1 General

- (1) The Contractor shall insure and transport the Plant, materials and his Equipment from manufacturers works (within Pakistan or from abroad) to the Site and shall be solely responsible for selection of routes and carriers, and expediting in order that Plant is safely and expeditiously transported to the Site.
- (2) The Contractor however, shall be solely responsible for satisfying himself at the time of transportation as to the adequacy of the road surfaces and structures. All costs related with reinforcement of roads, structures, diversions and the like, if any, shall be borne by the Contractor. The Contractor shall advise the concerned authorities in advance of the proposed transit of the heaviest and largest items of Plant and shall comply with instructions given by said authorities.
- (3) Within the limits imposed by law, the Contractor shall be entitled to utilize all the roads and other communication facilities existing in the country, to the same extent as any other user.

SI-11.2 Shipping

The shipping of all the consignment relating to Plant and Contractor's Equipment shall be arranged by the Contractor through reputed shipping lines including Pakistan National Shipping Corporation (PNSC). For working out a proper schedule to match the completion of Facilities, the Contractor will keep a continuous liaison with the Agent of the respective shipping line within the country of origin.

SI-11.3 Transportation in Pakistan

1. The Plant and Equipment coming by sea can be received by the Contractor either at Karachi Port or at Port Muhammad Bin Qasim or at Port Gawadar.
2. At Port Muhammad Bin Qasim, a conveyer belt nearby Steel Mill crosses the road with a clearance of 6 meters from road surface. In case the carrier with the consignment would be more than 6 meters in height, then the Plant and Equipment can be received at Karachi Port where, except for a busy road during the day, there is no constraint.
3. The Contractor however, shall be solely responsible for satisfying himself at the time of transportation as to the adequacy of the road surfaces and structures. All costs related with reinforcement of roads, structures, diversions and the like, if any, shall be borne by the Contractor. The Contractor shall advise the concerned authorities in advance of the proposed transit of the heaviest and largest items of Plant and Equipment and shall comply with instructions given by said authorities.
4. Within the limits imposed by law, the Contractor shall be entitled to utilize all the roads and other communication facilities existing in the country, to the same extent as any other use.

SI-11.4 Shipping Documents

1. Immediately after shipment leaves the port of embarkation, the Contractor shall submit complete and full shipping documents by airmail and by registered post or by courier service (in two separate covers to avoid non-delivery) to Manager (Custom Clearance & Logistics), NGC, Karachi and **Chief Engineer EHV (North) NGC, Islamabad** so as to reach at least fifteen (15) days in advance of the arrival of shipment at Karachi. The specified procedures are tentative. Final procedure will be agreed upon mutually.

Documents	Manager (Custom Clearance & Logistics)		For CE (EHV) North NGC, Islamabad
	Air Mail	Registered Cover	
Commercial Invoice/Payment Invoice Certificate of Origin	6	6	1 each
Warranty Certificate	3	3	1 each
Packing List	6	6	1 each
Ocean Bill of Lading or Airway Bill issued by the Freight Forwarder	2	1	1 Each
Non-negotiable bill of lading	3	3	1 each
Certificate or Policy of Marine Insurance from Manufacturers' works to	3	3	1 each

the Project Site, of the Portion of the Plant for which Certificate of Payment is requested			
Certificate that the Plant complies with the specifications	3	3	1 each
Pre-shipment inspection Certificate or letter of waiver	3	3	1 each
Notice to Deliver	3	3	1 each
Certificate of Origin	3	3	1 each
Any other document as considered necessary by the Employer / Project Manager	---	---	---

2. The Bills of Lading shall show the following:

- Shipper's name
- Consigned to
- M.V. Sailing Approx. on
- Project name and Package No.
- Port of discharge
- Steamship Contract No.

3. All documents shall bear the following information:

- Contract No.
- Weight and Dimensions
- Serial No. of Package
- (NGC, formerly NTDC) Inscription

4. All the above documents are to be prepared per shipment even if it is a partial shipment. In no case shall the amount billed on the invoice cover items not contained in that particular shipment.

Should any demurrage charges be incurred by the Employer due to any of the reasons mentioned below the same shall be deducted from any money or moneys due to the Contractor or recovered from him. The decision of the Manager (Custom Clearance & Logistics) NGC Karachi, regarding fixation of responsibility in this connection shall be binding on the Contractor:

- a) Owing to delay in forwarding relevant and complete set of negotiable shipping documents including original invoices, showing item wise prices and packing list to the Manager (Custom Clearance & Logistics);
- b) late receipt of documents by the Manager (Custom Clearance & Logistics) due to incorrect and incomplete address;
- c) due to receipt of incorrect or incomplete documents;
- d) defective marking or packing of the goods ordered; and
- e) due to any other reason for which the Contractor is held responsible.

In case the negotiable documents are not available the non-negotiable documents should be sent to the Manager (Custom Clearance & Logistics), but on the condition that negotiable document will be endorsed to the Manager (Custom Clearance & Logistics) immediately upon their receipt. If the Employer has to incur any expenditure for want of negotiable documents the same shall also be recovered from the Contractor in addition to the demurrage if incurred.

SI-11.5 Unloading and Storage at the Site

- (1) The Contractor shall load Plant from manufacturer's works (within or outside Employer's country), transport & unload all Plant and other materials to the Site. Items for permanent installations shall be properly stored and shall be protected as required to prevent damage or deterioration of any type. Storage/ Stacking methods shall be such as to cause minimum inconvenience to others and shall be arranged to facilitate inspection.
- (2) All Plant and other materials storage shall comply with the requirements of the Specifications or to the approval of the Project Manager.
- (3) Lifting of pieces, which are galvanized or painted, shall be by hand or by hemp rope or as approved by the Project Manager or by wire rope which is suitable covered with rubber or similar material lifting by steel chains is prohibited. Steel pieces shall not be dropped, thrown, or skidded over steel, concrete or rock surfaces.
- (4) When steel components are stored temporarily they shall be blocked on wood & separated to prevent damage.

SI-11.6 Ownership of Packing Materials

All packing boxes, reels, shipping containers except those containers which are not the property of the Contractor, planking covers, etc. shall become the property of the Employer. All the packing material shall be handed over to the Employer immediately after storage requirements of the Plant and Equipment including spares thereof or part thereof and other materials are over. The Employer, on application from the Contractor, may permit the Contractor to use some of the boxes and containers, without charge for construction erection/installation purposes.

SI-11.7 Receiving Reports and/or Damage Reports

1. The Contractor shall prepare and submit receiving reports to the Employer and the Project Manager to cover shipments received and checked at the job Site and/or storage area. Shipment on arrival at the job Site and/or storage area shall be unloaded, opened, and carefully checked by the Contractor in the presence of a designated representative of the Employer/Project Manager for any loss and damages in transit. In the event of loss and/or damage, the Contractor shall immediately report to Employer/Project Manager and a damage report countersigned by the Project Manager shall immediately be submitted by the Contractor to the Insurance Company with copies to the Employer / Project Manager. Prompt action shall be taken by the Contractor under intimation to Project Manager, to record the damaged or missing item(s) and it shall be ensured that the deliveries meet the final delivery dates and/or commissioning dates
2. In all cases of irreparable damage, the Contractor shall immediately notify the Contractor for re-manufacture and supply of the damaged part(s).

SI-12 SHOP INSPECTION AND ORDERS FOR PLANT & EQUIPMENT

SI-12.1 Inspection

Unless otherwise authorized by the Project Manager, no material or equipment shall be shipped from its point of original manufacture or final shop assembly before it has been approved by the Project Manager as per clause 23.12 of conditions of contract. The Employer however may waive off this condition at their

discretion for some items in case factory test results will be provided to the Employer / Project Manager.

SI-12.2 Plant & Equipment Orders

The Contractor shall provide to the Project Manager a list of Sub-Contractors and Vendors with whom orders are to be placed for materials or equipment which will enter directly into the work of the Contract. Triplicate copies of material or equipment orders and list of stock material or equipment shall be provided to the Project Manager. All orders and stock lists shall state the standard specification under which the material is to be furnished, pertinent drawing and part numbers if any, and the required delivery date, and shall state the material is subject to inspection and testing by the Project Manager.

SI-12.3 Acceptance of Materials

The approval by the Project Manager of any material or equipment prior to shipment shall in no way relieve the Contractor of any of his responsibilities for meeting all of the requirements of the Specifications and shall not prevent subsequent rejection if such material or equipment is later found to be defective or not conforming to the Specifications.

SI-13 SCHEDULE AND PROGRESS REPORTS

SI-13.1 Schedule

The Contractor shall carry out the Facilities in accordance with the dates/periods specified in Time Schedule to be provided as Appendix-4 of Contract Agreement, and with the Schedule which shall be provided pursuant to Sub-Clause 18.2 of the General Conditions of Contract. The Contractor shall regularly review the Schedule and notify the Project Manager promptly of any revisions which in his view may be required from time to time.

SI-13.1.1 Form of Schedule

The Schedule to be submitted by the Contractor pursuant to Sub-Clause 18.2 of General Conditions of Contract shall be a detailed CPM (critical path method) type, time scaled according to calendar dates and Project month numbers. The CPM for planning, scheduling, and controlling will be used for the Contract. The Contractor shall submit a schedule showing the logical sequence in which the Facilities will be carried out in sufficient detail to satisfy the Project Manager that the Facilities are thoroughly planned and meets all the requirements of the Contract Documents.

SI-13.1.2 Schedule of Shipping of Plant and Equipment to Site

1. Each group of Plant and Equipment shall be completely delivered to the Site stated in the Contract according to Shipping Schedule to be submitted for approval by the Project Manager at least six (6) weeks before shipment. The Contractor shall keep the Project Manager informed of the progress of the Contract and notify the Project Manager approximately thirty (30) days in advance, in writing, as to when the Plant/Goods will be ready for inspection and for shipping/delivering and shall supply lists covering each consignment in sufficient detail to enable the Project Manager to check the contents of the packages.
2. In preparing the Shipping Schedule, the Contractor shall fully take into

account the requirements (and possibilities) for ocean (or air) freight, inland transportation and expediting through customs. Progress of all shipments/deliveries to the Site shall be continuously monitored and the Contractor shall provide staff or agents to expedite all shipments/deliveries to ensure compliance with the approved Schedule.

SI-13.1.3 Erection/Construction Schedule

1. The Contractor shall prepare and submit Plant Erection & Commissioning Schedule as a part of detailed program to be submitted pursuant to Sub-Clause 18.2 of General Conditions of Contract. The delivery of sub-assemblies and other parts of the Plant should be so estimated so as to permit erection work and construction work to proceed in an orderly manner so that the Facilities can be completed by the required commissioning dates. The Contractor in preparing and regularly reviewing the Schedule in respect of the erection work shall comply with the requirements of the Contract.
2. The Contractor shall promptly bring to the attention of the Project Manager any amendment to the Schedule which in his view may at any time be required to ensure that the Commissioning Date/Periods will be met.

SI-13.1.4 Progress Reports

- (1) The Contractor within twenty-eight (28) days of the signing of the Contract shall submit in writing for the approval of the Project Manager a Schedule for the design, manufacture, delivery, erection, testing and commissioning of the Plant and design and construction of the associated civil work.
- (2) The submission to or approval by the Project Manager of such Schedule etc. shall not relieve the Contractor of any of his duties or responsibilities under the Contract.
- (3) At monthly intervals after submission of the Schedule, the Contractor shall submit to the Employer and Project Manager up to five (5) copies of a written detailed progress report in an approved form together with the copies of the above-mentioned Schedule indicating the state reached in the Transportation of Plant, Erection/ Construction, in percentage terms. Such monthly reports shall show the actual progress plotted against the scheduled diagrams, bar charts and curves in approved form, as may be required by the Employer/Project Manager. The reports shall be forwarded not later than the 8th of the subsequent month. The number of copies shall be as stipulated in the Specifications or as instructed by the Employer/Project Manager.
- (4) The Employer/Project Manager shall at all reasonable times be afforded access to the Contractor and any Sub-Contractor's premises for the purpose of ascertaining progress.

SI-13.1.5 Meetings

- (1) Soon after the date of signing of Contract, the Employer/Project Manager will require a Conference/Kick off Meeting with the Contractor at a place mutually agreed upon, to discuss scheduling of drawings, manufacturing, scheduled sequences of delivery and other similar problems which may be pertinent to the completion of the Project.
- (2) At monthly intervals or from time to time during the execution of the Contract, the Employer/Project Manager may call meetings, either in his Offices or at the Contractor's Offices in Pakistan as is deemed necessary for the purpose of progress monitoring and proper execution of the Contract.

- (3) As required by the Employer/Project Manager, responsible representatives of the Contractor shall attend such meetings.
- (4) All expenses incurred by the Contractor for attending such meetings shall be borne by the Contractor and shall not be reimbursable.

SI-14 SPARE PARTS

1. The Contractor shall provide the Mandatory spare parts as specified in the Price Schedule and Specifications.
2. All spare parts shall be duplicates of the original parts furnished and interchangeable therewith. The list of Mandatory spare parts has been drawn up by the Employer in the Bidding Documents. These spare parts shall serve the Plant and suitably identified and packed for long storage in containers plainly marked "SPARE PARTS ONLY". A packing list indicating the contents of each such container shall be securely fastened in a moisture proof envelope to the outside of the container. The packing list shall also provide the following information:
 - a) Contractor/Manufacturer
 - b) Contract Number
 - c) Identification, including Contractor's drawing number, reference of each spare part in the container.
3. The Contractor shall submit the consolidated Spare Parts List, showing the unit prices and quantities. All required spare parts must be delivered to Employer's designated warehouses (to be specified by the Employer before delivery of the same).
4. The Contractor shall follow a system of designating and tagging each and every spare part for ease of inventory store keeping. The final consolidated Spare Parts List shall bear such tagging particulars as will be convenient to locate the spare part without any loss of time.
5. All spare parts must be prepared and protected for long-term storage to preclude damage. Storage requirements shall be submitted to the Employer/Project Manager.
6. All spare parts lists shall be in English.

SI-15 SITE FACILITIES AND SERVICES

Attention is drawn to the obligations of the Contractor to make his own arrangements at his own expense for Services or facilities provided to his employees. Any cost incurred by the Contractor in respect of any of such Site facilities or services under the Contract shall be deemed to be included in the rates and prices in the Price Schedule and no separate payment, therefore, will be made to the Contractor.

SI-15.1 Accommodation

The Contractor shall provide and maintain at his cost residential accommodation and transportation facilities for his own use.

The Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all of his supervisory staff and labor employed for the purposes of or in connection with this Contract including all fencing, electricity, supply, sanitation, cook houses, fire prevention, water supply

and other requirements in connection with such housing accommodation or amenities.

SI-15.2 Offices

- (1) The Contractor shall arrange and maintain his offices at his own cost.

SI-15.3 Work yards and Storage Areas

- (1) Pursuant to Sub-Clause SI-11.5 hereof, no storage site shall be provided by the Employer to store Plant, materials or equipment. The Contractor shall procure, furnish, provide and arrange for all the necessary services and be responsible for the construction and maintenance of the necessary construction campus, offices and warehouses; and perform all other work necessary for completion of the Work described herein in strict conformance with these Specifications.
- (2) Outdoor storage space is available at the Site. The Contractor/Sub-Contractors shall co-operate with each other in the use of the storage space assigned to him by the Employer.
- (3) The Contractor shall provide his own watchman service to ensure security and safety of the Plant, materials and Work prior to the Employer's taking over the Work.

SI-15.4 Temporary Buildings

- (1) The Contractor shall provide and maintain all temporary structures required including warehouses, changes, change houses for workmen, sheds, etc. He shall also provide his own field office complete with telephone so that he or his official representative can be contacted by the Employer and/or Project Manager at all times.
- (2) Such temporary buildings and/or utilities shall remain the property of the Contractor and shall be removed by him at his expense upon the completion of the Works unless the Employer agrees otherwise and the Site reinstated to its original condition, all to the approval of the Project Manager.
- (3) All temporary erection facilities described above shall be removed by the Contractor after completion of the works, and the site cleared and cleaned of refuse or other foreign material as per instructions of the Employer/Project Manager.

SI-15.5 Electricity

No electricity will be provided by NGC to contractor.

SI-16 MEASUREMENT FOR PAYMENT

The measurement for payment for the various items of Price Schedules will be as follows:

1. Installation Services and Commissioning

a) Construct Right of Way Roads

No payment will be made for the construction of a right-of-way/access roads. The cost of such road, if constructed, shall be deemed to be included in total price of the Contract.

Moreover, Contractor shall bear all the cost pertaining to the rectification of damage to existing installations i.e. communication cables, underground power circuits, water/gas supply lines, sewerage lines and any other installation that occurs on the right of way of transmission line.

Employer will assess the compensation for unavoidable crop damage that occurs on the right of way in cultivated areas (if any). The Contractor will pay the compensation amount and will get it reimbursed as per actuals without any overhead interest or profit etc. The cost for access routes to the right-of-way, will be deemed to be included in the Contract.

b) **Clearing Right-of-Way**

Measurement for payment will be made based on the percent of right-of-way cleared and disposal completed.

Payment will be made from the lump sum amount given in Price Schedules. The payment shall include, but not be limited to, the cost of clearing a 50 meters wide right-of-way including cutting, grubbing, hauling, burning and clean-up and other work necessary to complete the required cleaning.

c) **Sub Soil Investigation (Drilling Boreholes, SPT and undisturbed sampling), if required**

Measurement for drilling and testing shall be made for actual length of boreholes drilled including SPT tests performed with the approval of the Project Manager and actual excavated depth for test pits.

Payment shall be based in accordance with the unit price quoted in the Price Schedules. All the necessary operations done to accomplish drilling and testing as specified shall be deemed to be part of this item and no extra payment for such operation shall be made. The cost of standard penetration tests, undisturbed sampling, rock coring and block sampling (in case of test pits) is included in the cost of Sub Soil Investigations and includes but not limited to all costs and expenses for records, operations, samples, preservation, and transportation to the laboratory of the selected disturbed/ undisturbed samples taken from the SPT Spoon.

d) **Laboratory Tests**

No Payment shall be made for any laboratory test performed. The unit price given for sub-soil investigations (if required) shall be deemed to include complete laboratory testing for the specified tests according to the ASTM Standards and compilation and presentation of reports including foundation design/designation in standard form as approved by the Project Manager.

e) **Reinforced Concrete Foundations**

Measurement for payment will be made for each type of foundation installed as shown on the relevant drawings for the various foundations.

Payment will be made based on the unit prices quoted for each type of foundation. The unit price shall include, but not be limited to tower staking, site contouring, the cost of furnishing all labour, equipment, materials (including concrete and reinforcement etc.) site leveling,

blasting/cutting/grading of tower site, excavation, shuttering, dewatering, shoring, forming, reinforcing, concreting, curing, backfilling, installing stub angles, tower grounding, setting, final tower site grading and all other associated Works, Plant and Equipment as necessary to produce finished foundations.

f) **Installing Piles**

Measurement under this item shall be made at actual number of the foundations constructed and actual length of each pile, pile cap and tie beam installed as shown on the Drawings and according to the Specifications.

Payment shall be made in accordance with the unit price quoted in the Price Schedules. Such unit price shall constitute full compensation for pile foundation construction based on measurement described above. Such payment shall be deemed to include the cost of tower staking, making bore holes, cost of materials (including concrete and reinforcement etc.), ramp, placement and curing of concrete and all other arrangements required to complete the pile foundation to the satisfaction of the Project Manager/Consultant.

g) **Retaining wall/Gravel Blanket/Gabion**

Measurement for payment will be made for Retaining wall/Gravel Blanket/Gabion installed as shown on the approved relevant construction drawings for particular tower location.

Payment shall be made in accordance with the unit price per cu.m quoted in the Price Schedules. Such unit price shall constitute full compensation for Retaining wall/Gravel Blanket/Gabion construction based on measurement described above. Such payment shall be deemed to include the cost of site contouring, the cost of furnishing all labour, equipment, materials (including PCC concrete, lean, gravel, cement, sand, mesh of steel wire, weep hole etc.) site levelling, blasting/cutting/grading in vicinity of tower site, excavation, shuttering, shorting, forming, concreting, curing, backfilling, and all other associated Works to produce finished the works.

h) **Steel Tower Erection**

Measurement for payment will be made for each type of component installed as shown on the relevant drawings for the various towers.

Payment will be made based on the unit prices quoted on per Ton basis. The unit prices shall include, but not be limited to, detailing of tower fabrication drawings supplied by the Employer, the cost of all labour, equipment, requisitioning, loading, transporting, from site storage areas to the sites, erecting together with bolts, nuts, washers, step bolts, including back bolting and punching of nuts and bolts and all other associated work necessary for the completion of the towers ready for installation of overhead OPGW and conductors thereon.

i) **Welding of Nuts & Bolts**

Measurement for payment will be made for each tower.

Payment will be made on the unit price quoted for each tower. The unit prices shall include, but not limited to welding of nuts & bolts up to 8.0m height and application of galvanox.

j) **Stringing Overhead OPGW and Conductor**

Measurement for payment will be made horizontally along the center line of the line route.

Payment will be made based on the unit price quoted in the Price Schedules. The unit prices shall include, but not be limited to, the cost of all labour, equipment, requisitioning, loading, transporting, distributing, stringing including installation of; insulator, OPGW hardware assemblies; accessories for conductor, overhead OPGW along with associated equipment; spacer dampers for conductor and stock bridge type vibration dampers for conductor and OPGW, sagging, clipping-in, dead-ends, jumpers including installation of spacer together with all hardware as shown on the relevant drawings, and all other associated work necessary for the completion of this phase of the work.

SI-17 PAYMENT OF CUSTOM DUTIES

The Contractor shall arrange and pay for all import clearance permits for all Plant / equipment and other materials imported by the Contractor into Pakistan for the purpose of or in connection with this Contract. Furthermore, upon arrival of each consignment of such imported Plant and other materials, the Contractor shall arrange and pay for the customs examination, clearance and duties/taxes thereof. All charges including charges for loading, unloading and forwarding expenses shall be borne by the Contractor. All custom duties and other taxes payable in Pakistan on the Plant to be Imported by the Contractor for incorporation in the Facilities shall be reimbursed to the Contractor according to the Reimbursement Procedure.

SI-18 SHOP INSPECTION AND ORDERS FOR MATERIALS

SI-18.1 Inspection

Unless otherwise authorized by the Employer/Project Manager no material or equipment shall be shipped from the premises of original manufacture or from the place of final shop assembly without pre-shipment inspection by NGC/Project Manager and subsequent approval by the Employer/Project Manager. However NGC may waive off this condition at their discretion for some items in case factory test results will be provided to NGC/ Project Manager for review and acceptance.

SI-18.2 Material Orders

The Contractor shall provide to the Project Manager a list of Sub-Contractors and Vendors with whom orders are to be placed for materials or equipment which will enter directly into the work of the Contract. Triplicate copies of material or equipment orders and list of stock material or equipment shall be provided to the Project Manager. All orders and stock lists shall state the standard specification under which the material is to be furnished, pertinent drawing and part numbers if any, and the required delivery date, and shall state the material is subject to inspection and testing by the Project Manager.

SI-18.3 Acceptance of Material

The approval by the Employer/Project Manager of any material or equipment prior to shipment shall in no way relieve the Contractor of any of his responsibilities for meeting all of the requirements of the Specifications and shall

not prevent subsequent rejection if such material or equipment is later found to be defective or not conforming to the Specifications.

SI-19 EXPEDITING

The Contractor shall provide the Employer with un-priced copies of the Contractor's Purchase Orders for material or approved Sub-contracted Work at the time any such orders are placed. The Contractor shall also provide the Employer with any other relevant information requested to ensure proper expediting and scheduling of the Work.

SI-20 PAYMENT FOR FACILITIES REQUIRED BY SUPPLEMENTARY INFORMATION

Unless expressly excluded, the cost of all work required by the Supplementary Information shall be considered to be included in the price and amounts quoted in the Price Schedule.

SI-21 PROJECT COMPLETION REPORT

The Contractor shall prepare comprehensive project completion report and shall submit (02) copies for review/approval of Project Manager. The Contractor shall furnish sixteen (16) copies of approved project completion report as per distribution in Clause SI-06.3.6.

SI-22 COMMUNICATIONS TO THE EMPLOYER

Pursuant to the definition of Project Manager, Clause 1 of the General Conditions of Contract, the Project Manager has established a Project Office at **Islamabad** as follows:-

Project Manager

Ultimate Consignee:

Chief Engineer (EHV), North, NGC, Islamabad
WAPDA Mega Hydro Project Building, Kashmir Chowk, Club Road, Islamabad
Phone # +92-051-9214564
Fax # +92-51-9214563
E-Mail: ceehvisd@ntdc.com.pk

5. Certificates

5.1 Form of Completion Certificate

Contract: [. . . . *insert name of contract and contract identification details.*]

Date:
Certificate No.:

To: [. . . . *insert name and address of contractor.*]

Dear Ladies and/or Gentlemen,

Pursuant to GCC Clause 24 (Completion of the Facilities) of the General Conditions of the Contract entered into between yourselves and the Employer dated [. . . .*insert date*. . . .], relating to the [. . . .*brief description of the Facilities*], we hereby notify you that the following part(s) of the Facilities was (were) complete on the date specified below, and that, in accordance with the terms of the Contract, the Employer hereby takes over the said part(s) of the Facilities, together with the responsibility for care and custody and the risk of loss thereof on the date mentioned below.

1. Description of the Facilities or part thereof: [. . . *description* . . .]
2. Date of Completion: [. . . *date* . . .]

However, you are required to complete the outstanding items listed in the attachment hereto as soon as practicable.

This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.

Very truly yours,

[. . . *Signature* . . .]
Project Manager

5.2 Form of Operational Acceptance Certificate

Contract: [. *insert name of contract and contract identification details*.]

Date:
Certificate No.:

To: [. *insert name and address of contractor*.]

Pursuant to GCC Sub clause 25.3 (Operational Acceptance) of the General Conditions of the Contract entered into between yourselves and the Employer dated [. . . *date*. . .], relating to the [. . . *brief description of the facilities*. . .], we hereby notify you that the Functional Guarantees of the following part(s) of the Facilities were satisfactorily attained on the date specified below.

1. Description of the Facilities or part thereof: [. . . *description* . . .]
2. Date of Operational Acceptance: [. . . *date* . . .]

This letter does not relieve you of your obligation to complete the execution of the Facilities in accordance with the Contract nor of your obligations during the Defect Liability Period.

Very truly yours,

[. . . *Signature* . . .]
Project Manager

6. Change Orders

6.1 Change Order Procedure

- 6.1.1 General
- 6.1.2 Change Order Log
- 6.1.3 References for Changes

6.2. Change Order Forms

- 6.2.1 Request for Change Proposal
- 6.2.2 Estimate for Change Proposal
- 6.2.3 Acceptance of Estimate
- 6.2.4 Change Proposal
- 6.2.5 Change Order
- 6.2.6 Pending Agreement Change Order
- 6.2.7 Application for Change Proposal

6.1. Change Order Procedure

6.1.1 General

This section provides samples of procedures and forms for implementing changes in the Facilities during the performance of the Contract in accordance with GCC Clause 39 (Change in the Facilities) of the General Conditions.

6.1.2 Change Order Log

The Contractor shall keep an up-to-date Change Order Log to show the current status of Requests for Change and Changes authorized or pending. Entries of the Changes in the Change Order Log shall be made to ensure that the log is up-to-date. The Contractor shall attach a copy of the current Change Order Log in the monthly progress report to be submitted to the Employer.

6.1.3 References for Changes

- (1) Request for Change as referred to in GCC Clause 39 shall be serially numbered CR-X-nnn.
- (2) Estimate for Change Proposal as referred to in GCC Clause 39 shall be serially numbered CN-X-nnn.
- (3) Acceptance of Estimate as referred to in GCC Clause 39 shall be serially numbered CA-X-nnn.
- (4) Change Proposal as referred to in GCC Clause 39 shall be serially numbered CP-X-nnn.
- (5) Change Order as referred to in GCC Clause 39 shall be serially numbered CO-X-nnn.

Note:

- (a) Requests for Change issued from the Employer's Home Office and the Site representatives of the Employer shall have the following respective references:

Home Office	CR-H-nnn
Site	CR-S-nnn

- (b) The above number "nnn" is the same for Request for Change, Estimate for Change Proposal, Acceptance of Estimate, Change Proposal and Change Order.

6.2 Change Order Forms

6.2.1 Request for Change Proposal Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

With reference to the captioned Contract, you are requested to prepare and submit a Change Proposal for the Change noted below in accordance with the following instructions within [*number*] days of the date of this letter [or on or before (*date*)].

1. Title of Change: [*Title*]
2. Change Request No./Rev.: [*Number*]
3. Originator of Change:
Employer: [*Name*]
Contractor (by Application for Change Proposal No. [*Number* Refer to Annex 6.2.7])
4. Brief Description of Change: [*Description*]
5. Facilities and/or Item No. of equipment related to the requested Change:
[*Description*]
6. Reference drawings and/or technical documents for the request of Change:

<i>Drawing No./Document No.</i>	<i>Description</i>
---------------------------------	--------------------
7. Detailed conditions or special requirements on the requested Change: [*Description*]
8. General Terms and Conditions:
 - (a) Please submit your estimate showing what effect the requested Change will have on the Contract Price.
 - (b) Your estimate shall include your claim for the additional time, if any, for completing the requested Change.
 - (c) If you have any opinion that is critical to the adoption of the requested Change in connection with the conformability to the other provisions of the Contract or the safety of the Plant or Facilities, please inform us in your proposal of revised provisions.
 - (d) Any increase or decrease in the work of the Contractor relating to the services of its personnel shall be calculated.
 - (e) You shall not proceed with the execution of the work for the requested Change until we have accepted and confirmed the amount and nature in writing.

[*Employer's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.2 Estimate for Change Proposal Form

[Contractor's letterhead]

To: [Employer's name and address]

Date:

Attention: [Name and title]

Contract Name: [Contract name]

Contract Number: [Contract number]

Dear Ladies and/or Gentlemen:

With reference to your Request for Change Proposal, we are pleased to notify you of the approximate cost to prepare the below-referenced Change Proposal in accordance with GCC Subclause 39.2.1 of the General Conditions. We acknowledge that your agreement to the cost of preparing the Change Proposal, in accordance with GCC Subclause 39.2.2, is required before estimating the cost for change work.

1. Title of Change: [Title]
2. Change Request No./Rev.: [Number]
3. Brief Description of Change: [Description]
4. Scheduled Impact of Change: [Description]
5. Cost for Preparation of Change Proposal: [insert costs, which shall be in the currencies of the contract]

(a)	Engineering	(Amount)
(i)	Engineer _____ hours (hrs) x _____ rate/hr =	_____
(ii)	Draftsperson _____ hrs x _____ rate/hr =	_____
	Sub-total _____ hrs	_____
	Total Engineering Cost	_____
(b)	Other Cost	_____
	Total Cost (a) + (b)	_____

[Contractor's name]

[Signature]

[Name of signatory]

[Title of signatory]

6.2.3 Acceptance of Estimate Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We hereby accept your Estimate for Change Proposal and agree that you should proceed with the preparation of the Change Proposal.

1. Title of Change: [*Title*]
2. Change Request No./Rev.: [*Request number/revision*]
3. Estimate for Change Proposal No./Rev.: [*Proposal number/revision*]
4. Acceptance of Estimate No./Rev.: [*Estimate number/revision*]
5. Brief Description of Change: [*Description*]
6. Other Terms and Conditions: In the event that we decide not to order the Change accepted, you shall be entitled to compensation for the cost of preparing the Change Proposal described in your Estimate for Change Proposal mentioned in para. 3 above in accordance with GCC Clause 39 of the General Conditions.

[*Employer's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.4 Change Proposal Form

[*Contractor's letterhead*]

To: [*Employer's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

In response to your Request for Change Proposal No. [Number], we hereby submit our proposal as follows:

1. Title of Change: [*Name*]
2. Change Proposal No./Rev.: [*Proposal number / revision*]
3. Originator of Change: Employer: [*Name*] / Contractor: [*Name*]
4. Brief Description of Change: [*Description*]
5. Reasons for Change: [*Reason*]
6. Facilities and/or Item No. of Equipment related to the requested Change: [*Facilities*]
7. Reference drawings and/or technical documents for the requested Change:
[*Drawing/Document No./Description*]
8. Estimate of increase/decrease to the Contract Price resulting from the Change Proposal:

Amount
[insert amounts in the currencies of the Contract]

(a) Direct material	_____
(b) Major construction equipment	_____
(c) Direct field labor (Total hrs)	_____
(d) Subcontracts	_____
(e) Indirect material and labor	_____
(f) Site supervision	_____
(g) Head office technical staff salaries	
Process engineer _____ hrs @ _____ rate/hr	_____
Project engineer _____ hrs @ _____ rate/hr	_____
Equipment engineer _____ hrs @ _____ rate/hr	_____
Procurement _____ hrs @ _____ rate/hr	_____
Draftsperson _____ hrs @ _____ rate/hr	_____
Total _____ hrs	_____

- (h) Extraordinary costs (computer, travel, etc.) _____
- (i) Fee for general administration, % of Items _____
- (j) Taxes and customs duties _____
- Total lump sum cost of Change Proposal [*Sum of items (a) to (j)*]
- Cost to prepare Estimate for Change Proposal [*Amount payable if Change is not accepted*]
9. Additional time for Completion required due to Change Proposal
10. Effect on the Functional Guarantees
11. Effect on the other terms and conditions of the Contract
12. Validity of this Proposal: within [Number] days after receipt of this Proposal by the Employer
13. Other terms and conditions of this Change Proposal:
- (a) You are requested to notify us of your acceptance, comments or rejection of this detailed Change Proposal within [Number] days from your receipt of this Proposal.
- (b) The amount of any increase and/or decrease shall be taken into account in the adjustment of the Contract Price.
- (c) Contractor's cost for preparation of this Change Proposal: [. . . .insert amount. This cost shall be reimbursed by the employer in case of employer's withdrawal or rejection of this Change Proposal without default of the contractor in accordance with GCC Clause 39 of the General Conditions]
- [*Contractor's name*]
- [*Signature*]
- [*Name of signatory*]
- [*Title of signatory*]

6.2.5 Change Order Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We approve the Change Order for the work specified in the Change Proposal (No. [*number*]), and agree to adjust the Contract Price, Time for Completion, and/or other conditions of the Contract in accordance with GCC Clause 39 of the General Conditions.

1. Title of Change: [*Name*]
2. Change Request No./Rev.: [*Request number / revision*]
3. Change Order No./Rev.: [*Order number / revision*]
4. Originator of Change: Employer: [*Name*] / Contractor: [*Name*]
5. Authorized Price:
Ref. No.: [*Number*] Date: [*Date*]
Foreign currency portion [*Amount*] plus Local currency portion [*Amount*]
6. Adjustment of Time for Completion
None Increase [*Number*] days Decrease [*Number*] days
7. Other effects, if any

Authorized by: _____
Employer

Date: _____

Accepted by: _____
Contractor

Date: _____

6.2.6 Pending Agreement Change Order Form

[*Employer's letterhead*]

To: [*Contractor's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We instruct you to carry out the work in the Change Order detailed below in accordance with GCC Clause 39 of the General Conditions.

1. Title of Change: [*Name*]
2. Employer's Request for Change Proposal No./Rev.: [*number/revision*] dated: [*date*]
3. Contractor's Change Proposal No./Rev.: [*number / revision*] dated: [*date*]
4. Brief Description of Change: [*Description*]
5. Facilities and/or Item No. of equipment related to the requested Change: [*Facilities*]
6. Reference Drawings and/or technical documents for the requested Change: [*Drawing / Document No. / Description*]
7. Adjustment of Time for Completion:
8. Other change in the Contract terms:
9. Other terms and conditions:

[*Employer's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

6.2.7 Application for Change Proposal Form

[*Contractor's letterhead*]

To: [*Employer's name and address*]

Date:

Attention: [*Name and title*]

Contract Name: [*Contract name*]

Contract Number: [*Contract number*]

Dear Ladies and/or Gentlemen:

We hereby propose that the work mentioned below be treated as a Change in the Facilities.

1. Title of Change: [*Name*]
2. Application for Change Proposal No./Rev.: [*Number / revision*] dated: [*Date*]
3. Brief Description of Change: [*Description*]
4. Reasons for Change:
5. Order of Magnitude Estimation (amount in the currencies of the Contract): [*Amount*]
6. Scheduled Impact of Change:
7. Effect on Functional Guarantees, if any:
8. Appendix:

[*Contractor's name*]

[*Signature*]

[*Name of signatory*]

[*Title of signatory*]

7. Personnel Requirements

Using Form PER - 1 and PER - 2 in Section 4 (Bidding Forms), the Bidder must demonstrate that it has personnel who meet the following requirements:

No.	Position	Total Work Experience [years]	Experience In Similar Work [years]
1	Project Manager ¹	15	10
2	Procurement Specialist	10	5
3	Construction Manager ¹	10	5
4	Safety Engineer (Accident Prevention Officer)	10	5
5	Civil Engineers ²	10	7
6	Electrical Engineers ²	10	7
7	Testing and Commissioning Engineer ²	10	8
8	Environment Specialist ³	5	2
9	Social Safeguard Specialist ⁴	5	2
10	Occupational Health & Safety (OHS) Officer ⁵	5	2

Notes:

1. Should be a graduate professional engineer (P.E) or equivalent as defined by PEC.
2. Should be at least registered engineer (R.E) or equivalent as defined by PEC.
3. Having a Master's degree or equivalent in Environment Studies.
4. Having a Master's degree or equivalent in Social Studies.
5. Having a Master's degree in Environmental Sciences or Environmental engineering with NEBOSH/OSHA certification.
6. The Project Manager and the Construction Manager shall be appointed subsequent to the prior approval by the Employer/Consultant as per sub-clause 18.1 of General Conditions of the Contract.

8. Equipment Requirements

Using Form EQU in Section 4 (Bidding Forms), the Bidder must demonstrate that it has the key equipment listed below and shall submit an undertaking to this effect on the "Form: Undertaking for supply of equipment required for execution / construction of the project" provided in Section 4 (Bidding Forms).

Sr. No.	Equipment Type and Characteristics	Minimum Number Required
1.	Total Stations, Theodolite & Level	4 Sets
2.	Real Time Kinematic (RTK)	1 Set
3.	Winch Machine (6ton ~ 10ton)	6
4.	Tensioner and Puller for Quad Bundle Conductor (ACSR Drake)	6 Sets
5.	Bull wire 6 ton (5000m)	4
6.	Pilot Line/Reel Winder (min 8000m)	2
7.	Reel Carriers for 3300m conductor length	12
8.	Derrick/Gin Pole	6
9.	Crane 20 ton	2
10.	Crane 60 ton	2
11.	Crane mounted trucks (4x4)	4
12.	Travellers for quad bundle Drake Conductor	250
13.	Travellers for OPGW	150
14.	100 ton Hydraulic Compressor with Jack	8
15.	60 ton Hydraulic Compressor with Jack	4
16.	Dies set (for Drake Conductor) for each machine As per specifications	2 each
17.	General tools for Erection & Stringing of Transmission Lines	3 Lot
18.	Cable Cars for Spacer Damper installation	12
19.	Instruments for Testing & Commissioning of Transmission Lines	1 Lot
20.	Tractor Trolley	6
21.	Trucks for Material Shifting	6
22.	Jeep 4x4	10
23.	Any other relevant T & P and machinery required for the successful completion of the work	As per Site requirement

The bidder shall also provide list of all items other than the above to be used for constructional and erection plant, tools and vehicles to be used in carrying out the work at Site as an attachment to Form EQU, including number of each kind, make, type, capacity of all equipment, working condition, which shall be deployed by him for Civil Works, Erection/Installation, Testing, Pre-commissioning and Commissioning of the Facilities in sufficient detail to demonstrate fully that the equipment will meet all the requirements of the Specifications.

The above-mentioned quantities are the bare-minimum requirements and it is the contractual obligation of the Contractor to arrange Tools & Plant as per actual site requirements to complete the Facilities within the stipulated timelines.

9. Environmental, Health and Safety Management Plan (EHSMP)

The Bidder shall submit an EHSMP commensurate with the proposed scope of works outlined above in this section.

The EHSMP must include, but not be limited to, mitigation measures to manage the following key Environmental, Health, and Safety risks:

- i. **Air Quality:** Mitigation of dust and emissions from construction activities, transportation, and machinery operation to ensure compliance with air quality standards and reduce health risks to workers and nearby communities.
- ii. **Water Management:** Proper management of water resources, including measures to prevent contamination of water bodies, manage wastewater, and ensure safe disposal of sewage and other effluents in line with environmental regulations.
- iii. **Noise Pollution:** Control of noise levels from machinery, construction activities, and transportation to minimize disturbance to local communities and wildlife, and to prevent hearing damage for workers.
- iv. **Waste Management:** Implementation of waste management strategies, including the safe disposal, recycling, or reuse of construction waste, hazardous materials, and domestic waste, ensuring minimal environmental impact.
- v. **Soil Erosion and Contamination:** Measures to control soil erosion during construction, protect topsoil, and prevent contamination from chemicals, oils, or construction runoff that could impact surrounding ecosystems and agriculture.
- vi. **Health and Safety:** Provision of personal protective equipment (PPE) for workers, ensuring safe working conditions, and addressing potential hazards such as slips, trips, falls, and exposure to harmful substances. Additionally, implementing a robust health and safety program to prevent accidents and manage any emergencies.
- vii. **Biodiversity Protection:** Identification and mitigation of potential impacts on local ecosystems, flora, and fauna, especially in sensitive areas, ensuring that the construction activities do not harm biodiversity or disrupt ecological balance.
- viii. **Community Health and Safety:** Ensuring safety measures for the local community, such as secure fencing of construction sites, traffic management plans, and emergency response plans to address potential accidents that could affect surrounding populations.
- ix. **Hazardous Materials Handling:** Safe management, storage, and disposal of hazardous materials such as chemicals, fuels, and oils to prevent accidents, spills, or contamination of the environment.
- x. **Cultural Heritage Protection:** Ensuring that construction activities do not disturb or damage any cultural heritage sites, practices, or monuments, with appropriate measures in place if such sites are identified.

The EHSMP must be fully compliant with ADB's Safeguard Policy Statement (SPS) and international best practices to ensure a comprehensive approach to environmental, health, and safety management throughout the project lifecycle.

10. Contract Management Plan and Reporting Requirements

- 10.1 Detailed reporting requirements are presented in the Contract Management Plan (CMP) template, attached as Annexure-B. The Contractor, the Project Manager and Consultant will use a dedicated web-based dashboard system for reporting, which will be based on the CMP structure. The system is provided free of charge by the employer.
- 10.2 The Contractor will submit a monthly report to the Employer using web-based project monitoring software to create & submit the monthly report as stated in para-SI-13.1.4.

Section 7: General Conditions of Contract

These General Conditions of Contract (GCC) are derived from the former Standard Bidding Document for Supply and Installation of Plant and Equipment of the World Bank, which were based on the Model Form of International Contract for Process Plant Construction published by the Engineering Advancement Association of Japan (ENAA). The multilateral development banks participating in the procurement harmonization process gratefully acknowledge the contribution of ENAA to the advancement of good contracting practices by its borrowers. The GCC contain general clauses to be applied on all contracts. The GCC in this section, read in conjunction with the Special Conditions of Contract in Section 8 and other documents listed therein, should be a complete document expressing all the rights and obligations of the contracting parties. The General Conditions herein shall not be altered.

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A. Contract and Interpretation

1. Definitions

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

- (a) "Contract" means the Contract Agreement entered into between the Employer and the Contractor, together with the Contract Documents referred to therein; they shall constitute the Contract, and the term "the Contract" shall in all such documents be construed accordingly.
- (b) "Contract Documents" means the documents listed in Article 1.1 (Contract Documents) of the Contract Agreement (including any amendments thereto).
- (c) "GCC" means the General Conditions of Contract.
- (d) "SCC" means the Special Conditions of Contract.
- (e) "day" means calendar day.
- (f) "year" means 365 days.
- (g) "month" means calendar month.
- (h) "Party" means the Employer or the Contractor, as the context requires.
- (i) "Employer" means the person named as such in the SCC and includes the legal successors or permitted assigns of the Employer.
- (j) "Project Manager" means the person appointed by the Employer in the manner provided in GCC Subclause 17.1 (Project Manager) hereof and named as such in the SCC to perform the duties delegated by the Employer.
- (k) "Contractor" means the person(s) named as Contractor in the Contract Agreement, and includes the legal successors or permitted assigns of the Contractor.
- (l) "Contractor's Representative" means any person nominated by the Contractor and approved by the Employer in the manner provided in GCC Subclause 17.2 (Contractor's Representative and Construction Manager) hereof to perform the duties delegated by the Contractor.
- (m) "Construction Manager" means the person appointed by the Contractor's Representative in the manner provided in GCC Subclause 17.2.4.
- (n) "Subcontractor," including manufacturers, means any person to whom execution of any part of the Facilities, including preparation of any design or supply of any Plant, is subcontracted directly or indirectly by the Contractor, and includes its legal successors or permitted assigns.
- (o) "Dispute Board" means the person or persons named as such in the SCC appointed by agreement between the Employer and the Contractor to make a decision on or to settle any dispute or difference between the Employer and the Contractor referred to

him or her by the parties pursuant to GCC Subclause 45.1 (Dispute Board) hereof.

- (p) "The Bank" means the financing institution named in the SCC.
- (q) "Contract Price" means the sum specified in Article 2.1 (Contract Price) of the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.
- (r) "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.
- (s) "Plant" means permanent plant, equipment, machinery, apparatus, articles, 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 under GCC Subclause 7.3 hereof), but does not include Contractor's Equipment.
- (t) "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.
- (u) "Contractor's 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) "Country of Origin" means the countries and territories eligible under the rules of the Bank as further elaborated in the SCC.
- (w) "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 Contract as forming part of the Site.
- (x) "Effective Date" means the date of fulfillment of all conditions stated in Article 3 (Effective Date) of the Contract Agreement, upon which the period until the Time for Completion shall be counted from.
- (y) "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, as referred to in GCC Clause 8 and in accordance with the relevant provisions of the Contract.
- (z) "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 as provided in GCC Clause 24 (Completion) hereof.

- (aa) "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 as provided in GCC Clause 24 (Completion) hereof.
- (bb) "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 as provided in GCC Subclause 25.1 (Commissioning) hereof, for the purpose of carrying out Guarantee Test(s).
- (cc) "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 (Functional Guarantees) to the Contract Agreement in accordance with the provisions of GCC Subclause 25.2 (Guarantee Test) hereof.
- (dd) "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 GCC Clause 28 (Functional Guarantees) hereof and shall include deemed acceptance in accordance with GCC Clause 25 (Commissioning and Operational Acceptance) hereof.
- (ee) "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 GCC Clause 27 (Defect Liability) hereof.

2. Contract Documents

- 2.1 Subject to Article 1.2 (Order of Precedence) of the Contract Agreement, all documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract shall be read as a whole.

3. Interpretation

- 3.1 In the Contract, except where the context requires otherwise,
- (a) words indicating one gender include all genders;
 - (b) words indicating the singular also include the plural and words indicating the plural also include the singular;
 - (c) provisions including the word "agree," "agreed," or "agreement" require the agreement to be record in writing;
 - (d) the word "tender" is synonymous with "bid," "tenderer" with "Bidder," and "tender documents" with "Bidding Documents;" and
 - (e) "written" or "in writing" means handwritten, typewritten, printed or electronically made, and resulting in a permanent record.

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

3.2 Incoterms

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

“Incoterms” means international rules for interpreting trade terms published by the International Chamber of Commerce (latest edition), 38 Cours Albert 1^{er}, 75008 Paris, France.

3.3 Entire Agreement

Subject to GCC Subclause 16.4 hereof, the Contract constitutes the entire agreement between the Employer and Contractor with respect to the subject matter of Contract and supersedes all communications, negotiations, and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

3.4 Amendment

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

3.5 Independent Contractor

The Contractor shall be an independent contractor performing the Contract. The Contract does not create any agency, partnership, joint venture, or other joint relationship between the parties hereto. Subject to the provisions of the Contract, the Contractor shall be solely responsible for the manner in which the Contract is performed. All employees, representatives, or Subcontractors engaged by the Contractor in connection with the performance of the Contract shall be under the complete control of the Contractor and shall not be deemed to be employees of the Employer, and nothing contained in the Contract or in any subcontract awarded by the Contractor shall be construed to create any contractual relationship between any such employees, representatives, or Subcontractors and the Employer.

3.6 Non-Waiver

3.6.1 Subject to GCC Subclause 3.6.2 below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, nor shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

3.6.2 Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, must be 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.

3.7 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.

3.8 Country of Origin

"Origin" means the place where the plant and 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 differs substantially in its basic characteristics or in purpose or utility from its components.

4. Communications

4.1 Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests, and discharges, these communications shall be

- (a) in writing and delivered against receipt; and
- (b) delivered, sent, or transmitted to the address for the recipient's communications as stated in the Contract Agreement.

When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Project Manager, a copy shall be sent to the Project Manager or the other Party, as the case may be.

5. Law and Language

5.1 The Contract shall be governed by and interpreted in accordance with laws of the country specified in the SCC.

5.2 The ruling language of the Contract shall be that stated in the SCC.

5.3 The language for communications shall be the ruling language unless otherwise stated in the SCC.

6. Fraud and Corruption

6.1 ADB requires Borrowers (including beneficiaries of ADB-financed activity) and their personnel, as well as firms and individuals participating in an ADB-financed activity, including but not limited to, Bidders, Suppliers, and Contractors, agents, subcontractors, subconsultants, service providers, subsuppliers, manufacturers (including their respective officers, directors, employees and personnel) under ADB-financed contracts to observe the highest standard of ethics during the procurement and execution of such contracts in accordance with ADB's Anticorruption Policy (1998, as amended from time to time). In pursuance of this policy, ADB

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

- (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
- (ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads,

- or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
- (iii) “coercive practice” means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - (iv) “collusive practice” means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;
 - (v) “abuse” means theft, waste, or improper use of assets related to ADB-related activity, either committed intentionally or through reckless disregard; and
 - (vi) “integrity violation” is any act, as defined under ADB’s Investigation and Enforcement Framework (as amended from time to time), which violates ADB’s Anticorruption Policy, including (i) to (v) above and the following: failure to disclose and manage conflict of interest¹, obstructive practice, violations of debarment, retaliation against whistleblowers or witnesses, and other violations of ADB’s Anticorruption Policy, including failure to adhere to the highest ethical standard.
- (b) will reject a proposal for award if it determines that the Bidder recommended for award or any of its officers, directors, employees, personnel, subconsultants, subcontractors, service providers, suppliers, or manufacturers has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;
 - (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of the ADB-financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation, including by failing to inform ADB in a timely manner at the time they knew of the integrity violations;
 - (d) will impose enforcement and disclosure actions on a firm or an individual, at any time, in accordance with ADB’s Anticorruption Policy and Investigation and Enforcement Framework, including declaring ineligible, either indefinitely or for a stated period of time, to participate² in ADB-financed,-administered, or -supported activities or to benefit from an ADB-financed, -administered, or -supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive,

¹ “Conflict of Interest” means any situation in which a party has interests that could improperly influence that party’s performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.

² Whether as a Contractor, Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document)

- coercive, or obstructive practices or other integrity violations; and
- (e) will have the right to require that a provision be included in the Bidding Documents and in contracts financed, administered, or supported by ADB, requiring Bidders, suppliers and contractors, consultants, manufacturers, service providers and other third parties engaged or involved in ADB-related activities, and their respective officers, directors, employees and personnel, to permit ADB or its representative to inspect the site and their assets, accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by ADB.
- 6.2 All Bidders, consultants, contractors, suppliers, manufacturers, service providers, and other third parties engaged or involved in ADB-related activities and their respective officers, directors, employees and personnel, are required to cooperate fully in any investigation when requested by ADB to do so. As determined on a case-by-case basis by ADB, such cooperation is set out in detail in the Investigation and Enforcement Framework.
- 6.3 All Bidders, consultants, contractors and suppliers shall require their officers, directors, employees, personnel, and agents to ensure that, in its contracts with its sub-consultants, subcontractors, and other third parties engaged or involved in ADB-related activities, such sub-consultants, subcontractors, and other third parties similarly are required to cooperate fully in any investigation when requested by ADB to do so.

B. Subject Matter of Contract

7. Scope of Facilities

- 7.1 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, the manufacture (including procurement, quality assurance, construction, installation, associated civil works, precommissioning, 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 (as specified in GCC Subclause 7.3 below) 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 (Scope of Works and Supply by the Employer) to the Contract Agreement.
- 7.2 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.

- 7.3 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 SCC and the provisions, if any, specified in the SCC. 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. 6, which shall be added to the Contract Price. The price of such spare parts shall include the purchase price therefore and other costs and expenses (including the Contractor's fees) relating to the supply of spare parts.

8. Time for Commencement and Completion

- 8.1 The Contractor shall commence work on the Facilities within the period specified in the SCC and without prejudice to GCC Subclause 26.2 hereof, the Contractor shall thereafter proceed with the Facilities in accordance with the time schedule specified in the Appendix 4 (Time Schedule) to the Contract Agreement.
- 8.2 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 SCC or within such extended time to which the Contractor shall be entitled under GCC Clause 40 hereof.

9. Contractor's Responsibilities

- 9.1 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.
- 9.2 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 28 days prior to bid 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.
- 9.3 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 Subclause 10.3 hereof and that are necessary for the performance of the Contract.
- 9.4 The Contractor shall comply with all laws in force in the country where the Facilities are to be implemented. The laws will include all local, state, national, or other laws that affect the performance of the Contract and bind upon the Contractor. The Contractor shall indemnify and hold harmless the Employer from and against any and all liabilities, damages,

claims, fines, penalties, and expenses of whatever nature arising or resulting from the violation of such laws by the Contractor or its personnel, including the Subcontractors and their personnel, but without prejudice to GCC Subclause 10.1 hereof.

- 9.5 Any plant and services that will be incorporated in or be required for the Facilities and other supplies shall have their origin as specified under GCC Clause 1 (Country of Origin). Any subcontractors retained by the Contractor shall be from a country as specified in GCC Clause 1 (Country of Origin).
- 9.6 The Contractor shall permit ADB or its representative to inspect the Contractor's site, assets, accounts and records, and other documents relating to the bid submission and contract performance of the Contractor and to have them audited by auditors appointed by ADB, if so required by ADB.
- 9.7 If the Contractor is a joint venture or consortium of two or more persons, all such persons shall be jointly and severally bound to the Employer for the fulfillment of the provisions of the Contract and shall designate one of such persons to act as a leader with authority to bind the joint venture or consortium. The composition or the constitution of the joint venture or consortium shall not be altered without the prior consent of the Employer.

9.8 Protection of the Environment

- (a) The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise, and other results of his operations.
- (b) The Contractor shall ensure that emissions, surface discharges, and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.

10. Employer's Responsibilities

- 10.1 All information and/or data to be supplied by the Employer as described in the Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement shall be deemed to be accurate, except when the Employer expressly states otherwise.
- 10.2 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 (Scope of Works and Supply by the Employer) to the Contract Agreement. The Employer shall give full possession of and accord all rights of access thereto on or before the date(s) specified in that Appendix.
- 10.3 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) to the Contract Agreement.

- 10.4 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.
- 10.5 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 (Scope of Works and Supply by the Employer) to the Contract Agreement at or before the time specified in the program furnished by the Contractor under GCC Subclause 18.2 hereof and in the manner thereupon specified or as otherwise agreed upon by the Employer and the Contractor.
- 10.6 The Employer shall be responsible for the continued operation of the Facilities after Completion, in accordance with GCC Subclause 24.8, and shall be responsible for facilitating the Guarantee Test(s) for the Facilities, in accordance with GCC Subclause 25.2.
- 10.7 All costs and expenses involved in the performance of the obligations under this GCC Clause 10 shall be the responsibility of the Employer, except those incurred by the Contractor with respect to the performance of Guarantee Tests, in accordance with GCC Subclause 25.2.
- 10.8 In the event that the Employer shall be in breach of any of his obligations imposed by the Contract, then the additional cost reasonably incurred by the Contractor in consequence thereof shall be added to the Contract Price.

C. Payment

11. **Contract Price**
 - 11.1 The Contract Price shall be as specified in Article 2 (Contract Price and Terms of Payment) of the Contract Agreement.
 - 11.2 Unless an adjustment clause is provided for in the SCC, 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.

- 11.3 Subject to GCC Subclauses 9.2, 10.1, and 35 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.

12. Terms of Payment

- 12.1 The Contract Price shall be paid as specified in Article 2 (Contract Price and Terms of Payment) of the Contract Agreement and in the Appendix (Terms and Procedures of Payment) to the Contract Agreement, which also outlines the procedures to be followed in making application for and processing payments.
- 12.2 No payment made by the Employer herein shall be deemed to constitute acceptance by the Employer of the Facilities or any part(s) thereof.
- 12.3 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 Appendix (Terms and Procedures of Payment) to the Contract Agreement for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.
- 12.4 The currency or currencies in which payments are made to the Contractor under this Contract shall be specified in the Appendix (Terms and Procedures of Payment) to the Contract Agreement, 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 bid.

13. Securities

- 13.1 Issuance of Securities
The Contractor shall provide the securities specified below in favor of the Employer at the times, and in the amount, manner, and form specified below.
- 13.2 Advance Payment Security
- 13.2.1 The Contractor shall, within 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 (Terms and Procedures of Payment) to the Contract Agreement, and in the same currency or currencies.
- 13.2.2 The security shall be in the form provided in the Bidding 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.
- 13.3 Performance Security
- 13.3.1 The Contractor shall, within 28 days of the notification of contract award, provide a security for the due performance of the Contract in the amount specified in the SCC.

13.3.2 The 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 one of the forms of bank guarantees provided in the Bidding Documents, as stipulated by the Employer in the SCC, or in another form acceptable to the Employer.

13.3.3 Unless otherwise specified in the SCC, 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, 540 days after Completion of the Facilities or 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 Subclause 27.8 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 Subclause 27.10, is liable for an extended defect liability obligation, the performance security shall be extended for the period and up to the amount specified in the SCC.

14. Taxes and Duties

14.1 Except as otherwise specifically provided in the Contract, the Contractor shall bear and pay all taxes, duties, levies, and 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.

14.2 Notwithstanding GCC Subclause 14.1 above, the Employer shall bear and promptly pay all customs and import duties as well as other local taxes like, e.g., a value-added tax (VAT), imposed by the law of the country where the Site is located on the Plant specified in Price Schedule No. 1 and that are to be incorporated into the Facilities.

14.3 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.

14.4 For the purpose of the Contract, it is agreed that the Contract Price specified in Article 2 (Contract Price and Terms of Payment) of the Contract Agreement is based on the taxes, duties, levies, and charges prevailing at the date 28 days prior to the date of bid submission in the country where the Site is located (hereinafter called "Tax" in this GCC Subclause 14.4). If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the performance of Contract, which was or will be assessed on the Contractor, Subcontractors, or their employees in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction therefrom, as the case may be, in accordance with GCC Clause 36 hereof.

D. Intellectual Property

15. License/Use of Technical Information

- 15.1 For the operation and maintenance of the Plant, the Contractor hereby grants a non-exclusive and nontransferable license (without the right to sublicense) 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 nonexclusive and nontransferable right (without the right to sublicense) 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.
- 15.2 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.

16. Confidential Information

- 16.1 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 termination of the Contract. Notwithstanding the above, the Contractor may furnish to its Subcontractor(s) such documents, data, and other information it receives from the Employer to the extent required for the Subcontractor(s) to perform its work under the Contract, in which event the Contractor shall obtain from such Subcontractor(s) an undertaking of confidentiality similar to that imposed on the Contractor under this GCC Clause 16.
- 16.2 The Employer shall not use such documents, data, and other information received from the Contractor for any purpose other than the operation and maintenance of the Facilities. Similarly, the Contractor shall not use such documents, data, and other information received from the Employer for any purpose other than the design, procurement of Plant, construction, or such other work and services as are required for the performance of the Contract.
- 16.3 The obligation of a party under GCC Subclauses 16.1 and 16.2 above, however, shall not apply to that information, which
- (a) now or hereafter enters the public domain through no fault of that party;
 - (b) 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 hereto; and
 - (c) otherwise lawfully becomes available to that party from a third

party that has no obligation of confidentiality.

- 16.4 The above provisions of this GCC Clause 16 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 Facilities or any part thereof.
- 16.5 The provisions of this GCC Clause 16 shall survive termination, for whatever reason, of the Contract.

E. Execution of the Facilities

17. Representatives 17.1 Project Manager

If the Project Manager is not named in the Contract, then within 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 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.

17.2 Contractor's Representative and Construction Manager

17.2.1 If the Contractor's Representative is not named in the Contract, then within 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 14 days, the Contractor's Representative shall be deemed to have been approved. If the Employer objects to the appointment within 14 days, giving the reason therefor, then the Contractor shall appoint a replacement within 14 days of such objection, and the foregoing provisions of this GCC Subclause 17.2.1 shall apply thereto.

17.2.2 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.

All notices, instructions, information, and all other communications given by the Employer or the Project Manager to the Contractor under the Contract shall be given to the Contractor's Representative or, in its absence, its deputy, except as herein otherwise provided.

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 Subclause 17.2.1.

17.2.3 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 Subclause 17.2.3 shall be deemed to be an act or exercise by the Contractor's Representative.

17.2.4 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, the Contractor's Representative or the Construction Manager shall appoint a suitable person to act as the Construction Manager's deputy.

17.2.5 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 Subclause 22.4 or a breach of the EHS Code of Conduct for Contractor's Personnel. The Employer shall provide evidence of the same, whereupon the Contractor shall remove such person from the Facilities.

17.2.6 If any representative or person employed by the Contractor is removed in accordance with GCC Subclause 17.2.5, the Contractor shall, where required, promptly appoint a replacement.

18. Work Program

18.1 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 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.

18.2 Program of Performance

Within 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 precommission 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 (Time Schedule) to the Contract Agreement 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 given in the SCC and any extension granted in accordance with GCC Clause 40, and shall submit all such revisions to the Project Manager.

18.3 Progress Report

The Contractor shall monitor progress of all the activities specified in the program referred to in GCC Subclause 18.2 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; (b) where any activity is behind the program, giving comments and likely consequences and stating the corrective action being taken; and, (c) status of compliance with the EIA, EMP, LMP and other Environmental, Health, and Safety (EHS) assessment and management documents following the EHS Metrics for Progress Reports attached as an annex to this General Conditions of Contract.

18.4 Progress of Performance

If at any time the Contractor's actual progress falls behind the program referred to in GCC Subclause 18.2, 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 Subclause 8.2, any extension thereof entitled under GCC Subclause 40.1, or any extended period as may otherwise be agreed upon between the Employer and the Contractor.

18.5 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.

19. Subcontracting

- 19.1 The Appendix 5 (List of Major Items of Plant and Services and List of Approved Subcontractors) to the Contract Agreement specifies major items of plant and services and a list of approved Subcontractors against each item, including manufacturers. Insofar as no Subcontractors are listed against any such item, the Contractor shall prepare a list of Subcontractors for such item for inclusion in such list. The Contractor may from time to time propose any addition to or deletion from any such list. The Contractor shall submit any such list or any modification thereto to the Employer for its approval in sufficient time so as not to impede the progress of work on the Facilities. When requesting such a prior approval, the Contractor shall submit, in addition to any other required document, an undertaking from each proposed Subcontractor to confirm that they have read, understand, and shall comply with the EHS obligations set out in Sub-Clause 9.9 [Environmental, Health, and Safety Code of Conduct]. Such approval by the Employer for any of the Subcontractors shall not relieve the Contractor from any of its obligations, duties, or responsibilities under the Contract.
- 19.2 The Contractor shall select and employ its Subcontractors for such major items from those listed in the lists referred to in GCC Subclause 19.1.
- 19.3 For items or parts of the Facilities not specified in the Appendix (List of Major Items of Plant and Services and List of Approved Subcontractors for Major Items) to the Contract Agreement, the Contractor may employ such Subcontractors as it may select, at its discretion.
- 19.4 Each subcontract shall include provisions which would entitle the Employer to require the subcontract to be assigned to the Employer under GCC 19.5 (if and when applicable), or in event of termination by the Employer under GCC 42.2.
- 19.5 If a Subcontractor's obligations extend beyond the expiry date of the relevant Defects Liability Period, and the Project Manager, prior to that date, instructs the Contractor to assign the benefits of such obligations to the Employer, then the Contractor shall do so.

20. Design and Engineering

- 20.1 Specifications and Drawings
- 20.1.1 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.
- 20.1.2 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.

20.2 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 28 days prior to date of bid 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 39.

20.3 Approval/Review of Technical Documents by Project Manager

20.3.1 The Contractor shall prepare or cause its Subcontractors to prepare and furnish to the Project Manager the documents listed in the Appendix (List of Documents for Approval or Review) to the Contract Agreement for its approval or review as specified and in accordance with the requirements of GCC Subclause 18.2 (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 Subclauses 20.3.2 through 20.3.7 shall apply to those documents requiring the Project Manager's approval, but not to those furnished to the Project Manager for its review only.

20.3.2 Within 14 days after receipt by the Project Manager of any document requiring the Project Manager's approval in accordance with GCC Subclause 20.3.1, 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 14 days, then the said document shall be deemed to have been approved by the Project Manager.

20.3.3 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. If the Project Manager disapproves a document, he shall specify the reasons for his decision.

20.3.4 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 Subclause 20.3.2. 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.

20.3.5 If any dispute or difference occurs between the Employer and the Contractor in connection with or arising out of the disapproval by the Project Manager of any document and/or any modification(s)

thereto that cannot be settled between the parties within a reasonable period, then such dispute or difference may be referred to a Dispute Board for determination in accordance with GCC Subclause 45.3 hereof. If such dispute or difference is referred to a Dispute Board, the Project Manager shall give instructions as to whether and, if so, how, performance of the Contract is to proceed. The Contractor shall proceed with the Contract in accordance with the Project Manager's instructions, provided that if the Dispute Board upholds the Contractor's view on the dispute and if the Employer has not given notice under Subclause 45.3 hereof, then the Contractor shall be reimbursed by the Employer for any additional costs incurred by reason of such instructions and shall be relieved of such responsibility or liability in connection with the dispute and the execution of the instructions as the Dispute Board shall decide, and the Time for Completion shall be extended accordingly.

20.3.6 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.

20.3.7 The Contractor shall not depart from any approved document unless the Contractor has first submitted to the Project Manager an amended document and obtained the Project Manager's approval thereof, pursuant to the provisions of this GCC Subclause 20.3.

If the Project Manager requests any change in any already approved document and/or in any document based thereon, the provisions of GCC Clause 39 shall apply to such request.

21. Procurement

21.1 Materials

Subject to GCC Subclause 14.2, the Contractor shall procure and transport all materials in an expeditious and orderly manner to the Site.

21.2 Employer-Supplied Materials

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

21.2.1 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 Subclause 18.2, unless otherwise mutually agreed.

21.2.2 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 Subclause 21.2.2 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.

- 21.2.3 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 27 or under any other provision of Contract.

21.3 Transportation

- 21.3.1 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.

- 21.3.2 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.

- 21.3.3 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.

- 21.3.4 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.

21.4 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 Subclause 14.2, 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 40.

22. Installation

22.1 Setting Out/Supervision

22.1.1 Benchmark

- (a) The Contractor shall be responsible for the true and proper

setting-out of the Facilities in relation to benchmarks, reference marks, and lines provided to it in writing by or on behalf of the Employer.

- (b) 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.

22.1.2 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.

22.2 Labor

22.2.1 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.

22.2.2 Persons in the Service of Employer

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

22.2.3 Labor Laws

- (a) The Contractor shall comply with all the relevant labor Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration, and emigration, and shall allow them all their legal rights.
- (b) The Contractor shall at all times during the progress of the Contract use its best endeavors to prevent any unlawful, riotous, or disorderly conduct or behavior by or amongst its employees and the labor of its Subcontractors.
- (c) The Contractor shall, in all dealings with its labor and the labor of its Subcontractors currently employed on or connected with the Contract, pay due regard to all recognized festivals, official holidays, religious, or other customs and all local laws and regulations pertaining to the employment of labor.

22.2.4 Rates of Wages and Conditions of Labor

- (a) The Contractor shall pay rates of wages, and observe conditions of labor, which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by employers whose trade or industry is similar to that of the Contractor.
- (b) The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, and allowances as are chargeable under the Laws for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.

22.2.5 Working Hours

- (a) No work shall be carried out on the Site on locally recognized days of rest, or outside the normal working hours stated in the SCC, unless
 - (i) otherwise stated in the Contract;
 - (ii) the Project Manager gives consent; or
 - (iii) the work is unavoidable, or necessary for the

protection of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Project Manager.

- (b) If and when the Contractor considers it necessary to carry out work at night or on public holidays so as to meet the Time for Completion and requests the Project Manager's consent thereto, the Project Manager shall not unreasonably withhold such consent.
- (c) This Subclause shall not apply to any work which is customarily carried out by rotary or double shifts.

22.2.6 Facilities for Staff and Labor

- (a) 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.
- (b) 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.

22.2.7 Health and Safety

- (a) The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay, and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Employer's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.
- (b) 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 protective measures to prevent accidents. Throughout the performance of the Contract, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.
- (c) The Contractor shall send to the Project Manager, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety, and welfare of persons, and damage to property, as the Project Manager may reasonably require.

22.2.8 Funeral Arrangements

In the event of the death of any of the Contractor's personnel or accompanying members of their families, the Contractor shall be responsible for making the appropriate arrangements

for their return or burial, unless otherwise specified in the SCC.

22.2.9 Records of Contractor's Personnel

The Contractor shall keep accurate records of the Contractor's personnel, including the number of each class of Contractor's Personnel on the Site and the names, ages, gender, hours worked, and wages paid to all workers. These records shall be summarized on a monthly basis in a form approved by the Project Manager and shall be available for inspection by the Project Manager until the Contractor has completed all work.

22.2.10 Supply of Foodstuff

The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.

22.2.11 Supply of Water

The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.

22.2.12 Measures against Insect and Pest Nuisance

The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce their danger to health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.

22.2.13 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give barter, or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift barter, or disposal by Contractor's Personnel.

22.2.14 Arms and Ammunition

The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.

22.2.15 Prohibition of All Forms of Forced or Compulsory Labor

The Contractor and its Subcontractors shall not employ "forced or compulsory labor" in any form. "Forced or compulsory labor" consists of all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty and includes any kind of involuntary or compulsory labor, such as indentured labor, bonded labor or similar labor-contracting arrangements.

The Contractor shall not employ persons who have been subject to trafficking. Trafficking in persons is defined as the recruitment, transportation, transfer, harboring, or receipt of persons by means of the threat or use of force or other forms of coercion, abduction, fraud, deception, abuse of power, or of a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having

control over another person, for the purposes of exploitation.

The Contractor shall ensure that its Subcontractors and suppliers comply with all the obligations under this Sub-Clause.

If forced labor/trafficking cases are identified, the Contractor will promptly take corrective actions to eliminate such practices from the project and shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.

22.2.16 Prohibition of Harmful Child Labor

The Contractor, and its Subcontractors, shall not employ a child under the age of completion of compulsory schooling, and in any case not under the minimum age of 15 in connection with a project, unless the Laws specify a higher age.

The Contractor, and its Subcontractors shall not employ or engage a child between the minimum age and the age of 18 in a manner 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.

The Contractor and its Subcontractors shall not employ or engage children between the minimum age and the age of 18 after an appropriate risk assessment has been conducted by the Contractor with the Project Manager's consent. The Contractor shall be subject to regular monitoring by the Project Manager that includes monitoring of health, working conditions, and hours of work.

Work considered hazardous for children is work that, by its nature or the circumstances in which it is carried out, is likely to jeopardize the health, safety, or morals of children. Such work activities prohibited for children include work:

- (a) with exposure to physical, psychological, or sexual abuse or harassment;
- (b) underground, underwater, or working at heights or in confined spaces;
- (c) with dangerous machinery, equipment, or tools, or involving handling or transport of heavy loads;
- (d) in unhealthy environments exposing them to hazardous substances, agents, or processes, or to temperatures, noise, or vibration damaging to their health; or
- (e) under difficult conditions such as working for long hours, during the night, or in confinement on the premises of the employer.

Regardless of age, the Contractor shall take appropriate measures to prevent and address any form of violence and harassment, bullying, intimidation, and/or exploitation, including any form of SEAH and ensure access to appropriate grievance mechanism. The Contractor shall ensure that its Subcontractors and suppliers comply with all the obligations under this Sub-Clause.

The Contractor shall take measures to require its suppliers (other than Subcontractors) not to employ or engage child labor as described in this clause. If child labor cases are identified, the Contractor shall take measures to require the suppliers to take appropriate steps to remedy them. Where the supplier does not remedy the situation, the Contractor shall within a reasonable period substitute the supplier with a supplier that is able to manage such risks.

22.3 Contractor's Equipment

22.3.1 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.

22.3.2 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.

22.3.3 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.

22.4 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.

22.5 Opportunities for Other Contractors

22.5.1 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.

- 22.5.2 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.
- 22.5.3 The Contractor shall also so arrange to perform its work as to minimize, to the extent possible, interference with the work of other contractors. The Project Manager shall determine the resolution of any difference or conflict that may arise between the Contractor and other contractors and the workers of the Employer in regard to their work.
- 22.5.4 The Contractor shall notify the Project Manager promptly of any defects in the other Contractors' work that come to its notice, and that could affect the Contractor's work. The Project Manager shall determine the corrective measures, if any, required to rectify the situation after inspection of the Facilities. Decisions made by the Project Manager shall be binding on the Contractor.

22.6 Emergency Work

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 therefore. 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, the 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.

22.7 Site Clearance

22.7.1 Site Clearance in Course of Performance

In the course of carrying out the Contract, the Contractor shall keep the Site 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.

22.7.2 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.

22.8 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.

23. Test and Inspection

23.1 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.

23.2 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.

23.3 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.

23.4 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.

23.5 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 impedes 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.

23.6 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 Subclause 23.3.

23.7 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 Dispute Board for determination in accordance with GCC Subclause 45.3.

- 23.8 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.
- 23.9 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 Subclause 23.4, shall release the Contractor from any other responsibilities under the Contract.
- 23.10 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.
- 23.11 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.

If any parts of the Facilities or foundations have been covered up at the Site after compliance with the requirement of GCC Subclause 23.10 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.

24. Completion of the Facilities

- 24.1 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.
- 24.2 Within 7 days after receipt of the notice from the Contractor under GCC Subclause 24.1, the Employer shall supply the operating and maintenance personnel specified in the Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement for Pre-commissioning of the Facilities or any part thereof.

Pursuant to the Appendix (Scope of Works and Supply by the Employer) to the Contract Agreement, the Employer shall also provide, within the said 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.

24.3 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 Subclause 24.2, the Contractor shall commence Pre-commissioning of the Facilities or the relevant part thereof in preparation for Commissioning, subject to GCC Subclause 25.5.

24.4 As soon as all works in respect of Pre-commissioning are completed and, in the opinion of the Contractor, the Facilities or any part thereof is ready for Commissioning, the Contractor shall so notify the Project Manager in writing.

24.5 The Project Manager shall, within 14 days after receipt of the Contractor's notice under GCC Subclause 24.4, 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 Subclause 24.4, 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 Subclause 24.4.

If the Project Manager is satisfied that the Facilities or that part thereof have reached Completion, the Project Manager shall, within 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.

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

24.6 If the Project Manager fails to issue the Completion Certificate and fails to inform the Contractor of any defects and/or deficiencies within 14 days after receipt of the Contractor's notice under GCC Subclause 24.4 or within 7 days after receipt of the Contractor's repeated notice under GCC Subclause 24.5, 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.

24.7 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.

24.8 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.

25. Commissioning and Operational Acceptance

25.1 Commissioning

25.1.1 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 Subclause 24.5, or immediately after the date of the deemed Completion, under GCC Subclause 24.6.

25.1.2 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.

25.1.3 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.

25.2 Guarantee Test

25.2.1 Subject to GCC Subclause 25.5, 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 (Functional Guarantees) to the Contract Agreement. 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.

25.2.2 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 SCC 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 Subclauses 28.2 and 28.3 shall not apply.

25.3 Operational Acceptance

25.3.1 Subject to GCC Subclause 25.4 below, Operational Acceptance shall occur in respect of the Facilities or any part thereof when

- (a) the Guarantee Test has been successfully completed and the Functional Guarantees 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 specified in the SCC, or any other agreed upon period as specified in GCC Subclause 25.2.2 above; or
- (c) the Contractor has paid the liquidated damages specified in

GCC Subclause 28.3 hereof; and

- (d) any minor items mentioned in GCC Subclause 24.7 hereof relevant to the Facilities or that part thereof have been completed.

25.3.2 At any time after any of the events set out in GCC Subclause 25.3.1 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.

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

25.3.4 If within 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.

25.4 Partial Acceptance

25.4.1 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.

25.4.2 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.

25.5 Delayed Pre-Commissioning and/or Guarantee Test

25.5.1 In the event that the Contractor is unable to proceed with the Precommissioning of the Facilities pursuant to Subclause 24.3, or with the Guarantee Test pursuant to Subclause 25.2, for reasons attributable to the Employer either on account of nonavailability of other facilities under the responsibilities of other contractor(s), or for reasons beyond the Employer's control, the provisions leading to "deemed" completion of activities such as Completion, pursuant to GCC Subclause 24.6, and Operational Acceptance, pursuant to GCC Subclause 25.3.4, and Contractor's obligations regarding Defect Liability Period, pursuant to GCC Subclause 27.2, Functional Guarantee, pursuant to GCC Clause 28, and Care of Facilities, pursuant to GCC Clause 32, and GCC Clause 41.1, Suspension, shall not

apply. In this case, the following provisions shall apply.

25.5.2 When the Contractor is notified by the Project Manager that he will be unable to proceed with the activities and obligations pursuant to above Subclause 25.5.1, 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 Subclause 26.2;
- (b) payments due to the Contractor in accordance with the provision specified in the Appendix (Terms and Procedures of Payment) to the Contract Agreement, which would not have been payable in normal circumstances due to noncompletion 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 Subclause 25.5.3 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 Subclause 32.1 shall be reimbursed to the Contractor by the Employer for the period between the notification mentioned above and the notification mentioned in Subclause 25.5.4 below. The provision of GCC Subclause 33.2 shall apply to the Facilities during the same period.

25.5.3 In the event that the period of suspension under above Subclause 25.5.1 actually exceeds 180 days, the Employer and Contractor shall mutually agree to any additional compensation payable to the Contractor.

25.5.4 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 all the specified activities and obligations under the contract.

F. Guarantees and Liabilities

26. Completion Time Guarantee

26.1 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 SCC pursuant to GCC Subclause 8.2, or within such extended time to which the Contractor

shall be entitled under GCC Clause 40 hereof.

- 26.2 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 40, the Contractor shall pay to the Employer liquidated damages in the amount specified in the SCC 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 SCC as a percentage rate of the Contract Price. Once the "Maximum" is reached, the Employer may consider termination of the Contract, pursuant to GCC Subclause 42.2.2.

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 40. 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 Subclause 26.2, the failure by the Contractor to attain any milestone or other act, matter, or thing by any date specified in the Appendix (Time Schedule) to the Contract Agreement and/or other program of work prepared pursuant to GCC Subclause 18.2 shall not render the Contractor liable for any loss or damage thereby suffered by the Employer.

- 26.3 If the Contractor attains Completion of the Facilities or any part thereof before the Time for Completion or any extension thereof under GCC Clause 40, the Employer shall pay to the Contractor a bonus in the amount specified in the SCC. The aggregate amount of such bonus shall in no event exceed the amount specified as "Maximum" in the SCC.

27. Defect Liability

- 27.1 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.
- 27.2 The Defect Liability Period shall be 540 days from the date of Completion of the Facilities (or any part thereof) or 1 year from the date of Operational Acceptance of the Facilities (or any part thereof), whichever first occurs, unless specified otherwise in the SCC pursuant to GCC Subclause 27.10.

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.

27.3 The Contractor's obligations under this GCC Clause 27 shall not apply to

- (a) any materials that are supplied by the Employer under GCC Subclause 21.2, 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 Subclause 27.7.

27.4 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.

27.5 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 27.

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.

27.6 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.

27.7 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 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.

- 27.8 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.
- 27.9 Except as provided in GCC Clauses 27 and 33, 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, criminal, or willful action of the Contractor.
- 27.10 In addition, any such component of the Facilities and during the period of time as may be specified in the SCC 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 Subclause 27.2.

28. Functional Guarantees

- 28.1 The Contractor guarantees that during the Guarantee Test, the Facilities and all parts thereof shall attain the Functional Guarantees specified in the Appendix (Functional Guarantees) to the Contract Agreement, subject to, and upon the conditions therein specified.
- 28.2 If, for reasons attributable to the Contractor, the minimum level of the Functional Guarantees specified in the Appendix (Functional Guarantees) to the Contract Agreement 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 Subclause 42.2.2.
- 28.3 If, for reasons attributable to the Contractor, the Functional Guarantees specified in the Appendix (Functional Guarantees) to the Contract Agreement 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 (Functional Guarantees) to the Contract Agreement.
- 28.4 The payment of liquidated damages under GCC Subclause 28.3, up to the limitation of liability specified in the Appendix (Functional

Guarantees) to the Contract Agreement, shall completely satisfy the Contractor's guarantees under GCC Subclause 28.3, 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.

29. Patent Indemnity

- 29.1 The Contractor shall, subject to the Employer's compliance with GCC Subclause 29.2, 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.

- 29.2 If any proceedings are brought or any claim is made against the Employer arising out of the matters referred to in GCC Subclause 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 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 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.

- 29.3 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.

30. Limitation of Liability

- 30.1 Except in cases of criminal negligence or willful misconduct,
- (a) the Contractor shall not be liable to the Employer, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Contractor to pay liquidated damages to the Employer; and
 - (b) the aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed a multiple of the Contract Price specified in the SCC or, if a multiple 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.

G. Risk Distribution

31. Transfer of Ownership

- 31.1 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.
- 31.2 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.
- 31.3 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.
- 31.4 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.
- 31.5 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.

32. Care of Facilities

- 32.1 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 24 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 27. 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 Subclauses 32.2 and 38.1.

32.2 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,

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 39. 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 39, 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 Subclause 42.1 hereof.

32.3 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 Subclause 32.2 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 Subclauses 32.2(b) and (c) and 38.1.

32.4 With respect to any loss or damage caused to the Facilities or any part thereof or to the Contractor's Equipment by reason of any of the matters specified in GCC Subclause 38.1, the provisions of GCC Subclause 38.3 shall apply.

33. Loss of or

33.1 Subject to GCC Subclause 33.3, the Contractor shall indemnify and

**Damage to
Property;
Accident or Injury
to Workers;
Indemnification**

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.

- 33.2 If any proceedings are brought or any claim is made against the Employer that might subject the Contractor to liability under GCC Subclause 33.1, 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 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 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.

- 33.3 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 34, provided that such fire, explosion, or other perils were not caused by any act or failure of the Contractor.
- 33.4 The party entitled to the benefit of an indemnity under this GCC Clause 33 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.

34. Insurance

- 34.1 To the extent specified in the Appendix (Insurance Requirements) to the Contract Agreement, 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 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.

(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 (Insurance Requirements) to the Contract Agreement.

34.2 The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Subclause 34.1, 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 Subclause 34.1 except for the Cargo Insurance During Transport, 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.

34.3 The Contractor shall, in accordance with the provisions of the Appendix (Insurance Requirements) to the Contract Agreement, 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 21 days' notice shall be given to the Employer by insurers prior to cancellation or material modification of a policy.

- 34.4 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.
- 34.5 The Employer shall at its expense take out and maintain in effect during the performance of the Contract those insurances specified in the Appendix (Insurance Requirements) to the Contract Agreement, 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 coinsureds under all such policies. All insurers' 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. 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 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 Subclause 34.5.
- 34.6 If the Contractor fails to take out and/or maintain in effect the insurances referred to in GCC Subclause 34.1, the Employer may take out and maintain in effect any such insurances and may from time to time deduct from any amount due 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 34.5, 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.
- 34.7 Unless otherwise provided in the Contract, the Contractor shall prepare and conduct all and any claims made under the policies effected by it pursuant to this GCC Clause 34, 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.

35. Unforeseen Conditions

- 35.1 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 of

- (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 Subclause 35.1, 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.

35.2 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 Subclause 35.1 shall be paid by the Employer to the Contractor as an addition to the Contract Price.

35.3 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 Subclause 35.1, the Time for Completion shall be extended in accordance with GCC Clause 40.

36. Change in Laws and Regulations

36.1 If, after the date 28 days prior to the date of Bid submission, in the country where the Site is located, any law, regulation, ordinance, order or by-law having the force of law is enacted, promulgated, abrogated, or changed, which shall be deemed to include any change in interpretation or application by the competent authorities, that subsequently affects the costs and expenses of the Contractor and/or the Time for Completion, the Contract Price shall be correspondingly increased or decreased, and/or the Time for Completion shall be reasonably adjusted to the extent that the Contractor has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced costs shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in

accordance with the SCC, pursuant to GCC Subclause 11.2.

37. Force Majeure

- 37.1 “Force Majeure” shall mean any event beyond the reasonable control of the Employer or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:
- (a) war, hostilities, or warlike operations whether a state of war be declared or not, invasion, act of foreign enemy and civil war;
 - (b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion, and terrorist acts;
 - (c) confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority;
 - (d) strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine, and plague;
 - (e) earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear, and pressure waves or other natural or physical disaster; and
 - (f) shortage of labor, materials, or utilities where caused by circumstances that are themselves Force Majeure.
- 37.2 If either party is prevented, hindered, or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within 14 days after the occurrence of such event.
- 37.3 The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party’s performance is prevented, hindered, or delayed. The Time for Completion shall be extended in accordance with GCC Clause 40.
- 37.4 The party or parties affected by the event of Force Majeure shall use reasonable efforts to mitigate the effect thereof upon its or their performance of the Contract and to fulfill its or their obligations under the Contract, but without prejudice to either party’s right to terminate the Contract under GCC Subclauses 37.6 and 38.5.
- 37.5 No delay or nonperformance by either party hereto caused by the occurrence of any event of Force Majeure shall
- (a) constitute a default or breach of the Contract; or
 - (b) give rise to any claim for damages or additional cost or expense occasioned thereby, subject to GCC Subclauses 32.2, 38.3, and

38.4

if and to the extent that such delay or nonperformance is caused by the occurrence of an event of Force Majeure.

- 37.6 If the performance of the Contract is substantially prevented, hindered, or delayed for a single period of more than 60 days or an aggregate period of more than 120 days on account of one or more events of Force Majeure during the currency of the Contract, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other, but without prejudice to either party's right to terminate the Contract under GCC Subclause 38.5.
- 37.7 In the event of termination pursuant to GCC Subclause 37.6, the rights and obligations of the Employer and the Contractor shall be as specified in GCC Subclauses 42.1.2 and 42.1.3.
- 37.8 Notwithstanding GCC Subclause 37.5, Force Majeure shall not apply to any obligation of the Employer to make payments to the Contractor herein.

38. War Risks

- 38.1 "War Risks" shall mean any event specified in paragraphs (a) and (b) of GCC Subclause 37.1 and any explosion or impact of any mine, bomb, shell, grenade, or other projectile, missile, munitions, or explosive of war, occurring or existing in or near the country (or countries) where the Site is located.
- 38.2 Notwithstanding anything contained in the Contract, the Contractor shall have no liability whatsoever for or with respect to
- (a) destruction of or damage to Facilities, Plant, or any part thereof;
 - (b) destruction of or damage to property of the Employer or any third party; or
 - (c) injury or loss of life
- if such destruction, damage, injury or loss of life is caused by any war risks, and the Employer shall indemnify and hold the Contractor harmless from and against any and all claims, liabilities, actions, lawsuits, damages, costs, charges, or expenses arising in consequence of or in connection with the same.
- 38.3 If the Facilities or any Plant or Contractor's Equipment or any other property of the Contractor used or intended to be used for the purposes of the Facilities shall sustain destruction or damage by reason of any war risks, the Employer shall pay the Contractor for
- (a) any part of the Facilities or the Plant so destroyed or damaged to the extent not already paid for by the Employer and so far as may be required by the Employer, and as may be necessary for completion of the Facilities;
 - (b) replacing or making good any Contractor's Equipment or other property of the Contractor so destroyed or damaged; and
 - (c) replacing or making good any such destruction or damage to the

Facilities or the Plant or any part thereof.

If the Employer does not require the Contractor to replace or make good any such destruction or damage to the Facilities, the Employer shall either request a change in accordance with GCC Clause 39, excluding the performance of that part of the Facilities thereby destroyed or damaged or, where the loss, destruction, or damage affects a substantial part of the Facilities, shall terminate the Contract, pursuant to GCC Subclause 42.1.

If the Employer requires the Contractor to replace or make good on any such destruction or damage to the Facilities, the Time for Completion shall be extended in accordance with GCC 40.

38.4 Notwithstanding anything contained in the Contract, the Employer shall pay the Contractor for any increased costs or incidentals to the execution of the Contract that are in any way attributable to, consequent on, resulting from, or in any way connected with any war risks, provided that the Contractor shall as soon as practicable notify the Employer in writing of any such increased cost.

38.5 If during the performance of the Contract any war risks shall occur that financially or otherwise materially affect the execution of the Contract by the Contractor, the Contractor shall use its reasonable efforts to execute the Contract with due and proper consideration given to the safety of its and its Subcontractors' personnel engaged in the work on the Facilities, provided, however, that if the execution of the work on the Facilities becomes impossible or is substantially prevented for a single period of more than sixty (60) days or an aggregate period of more than one hundred and twenty (120) days on account of any war risks, the parties will attempt to develop a mutually satisfactory solution, failing which either party may terminate the Contract by giving a notice to the other.

38.6 In the event of termination pursuant to GCC Subclauses 38.3 or 38.5, the rights and obligations of the Employer and the Contractor shall be specified in GCC Subclauses 42.1.2 and 42.1.3.

H. Change in Contract Elements

39. Change in the Facilities

39.1 Introducing a Change

39.1.1 Subject to GCC Subclauses 39.2.5 and 39.2.7, 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.

39.1.2 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.

39.1.3 Notwithstanding GCC Subclauses 39.1.1 and 39.1.2, 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.

39.1.4 The procedure on how to proceed with and execute Changes is specified in GCC Subclauses 39.2 and 39.3, and further details and forms are provided in the Employer's Requirements (Forms and Procedures).

39.2 Changes Originating from Employer

39.2.1 If the Employer proposes a Change pursuant to GCC Subclause 39.1.1, 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, and
- (f) effect on any other provisions of the Contract.

39.2.2 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.

39.2.3 Upon receipt of the Employer's instruction to proceed under GCC Subclause 39.2.2(a), the Contractor shall, with proper expedition, proceed with the preparation of the Change Proposal, in accordance with GCC Subclause 39.2.1.

39.2.4 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.

39.2.5 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 39 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 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.

39.2.6 Upon receipt of the Change Proposal, the Employer and the Contractor shall mutually agree upon all matters therein contained. Within 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 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 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 Subclause 39.2.2.

39.2.7 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.

If the parties cannot reach agreement within 60 days from the date of issue of the Pending Agreement Change Order, then the matter may be referred to the Dispute Board in accordance with the provisions of GCC Subclause 45.3.

39.3 Changes Originating from Contractor

39.3.1 If the Contractor proposes a Change pursuant to GCC Subclause 39.1.2, 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 Subclause 39.2.1.

Upon receipt of the Application for Change Proposal, the parties shall follow the procedures outlined in GCC Subclauses 39.2.6 and 39.2.7. 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.

40. Extension of Time for Completion

40.1 The Time(s) for Completion specified in the SCC 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 39;
- (b) any occurrence of Force Majeure as provided in GCC Clause 37, unforeseen conditions as provided in GCC Clause 35, or other occurrence of any of the matters specified or referred to in paragraphs (a), (b) and (c) of GCC Subclause 32.2;
- (c) any suspension order given by the Employer under GCC Clause 41 hereof or reduction in the rate of progress pursuant to GCC Subclause 41.2; or
- (d) any changes in laws and regulations as provided in GCC Clause 36; or
- (e) any default or breach of the Contract by the Employer, or any activity, act or omission of the Employer, or the Project Manager, or any other contractors employed by the Employer; or
- (f) any other matter specifically mentioned in the Contract; or
- (g) 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 Subclause

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.

40.2 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. In the event that the Contractor does not accept the Employer's estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to a Dispute Board, pursuant to GCC Subclause 45.3.

40.3 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 40.2, 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 40.1, the amount of such extra costs shall be added to the Contract Price.

41. Suspension

41.1 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 therefor. 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 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 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 39, 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 39 or, where it affects the whole of the

Facilities, as termination of the Contract under GCC Subclause 42.1.

41.2 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 (Terms and Procedures of Payment) to the Contract Agreement, 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 Subclause 12.3, 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 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 Subclause 10.2, or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities,

then the Contractor may by 14 days' notice to the Employer suspend performance of all or any of its obligations under the Contract, or reduce the rate of progress.

41.3 If the Contractor's performance of its obligations is suspended, or the rate of progress is reduced pursuant to this GCC Clause 41, then the Time for Completion shall be extended in accordance with GCC Subclause 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.

41.4 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.

42. Termination

42.1 Termination for Employer's Convenience

42.1.1 The Employer may at any time terminate the Contract for any reason by giving the Contractor a notice of termination that refers to this GCC Subclause 42.1.

42.1.2 Upon receipt of the notice of termination under GCC Subclause 42.1.1, the Contractor shall, either immediately or upon the date specified in the notice of termination,

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe

condition;

- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii) below;
- (c) remove all Contractor's Equipment from the Site, repatriate the Contractor's and its Subcontractors' personnel from the Site, remove from the Site any wreckage, rubbish, and debris of any kind, and leave the whole of the Site in a clean and safe condition; and
- (d) subject to the payment specified in GCC Subclause 42.1.3,
 - (i) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination;
 - (ii) to the extent legally possible, assign to the Employer all right, title, and benefit of the Contractor to the Facilities and to the Plant as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors; and
 - (iii) deliver to the Employer all nonproprietary drawings, specifications, and other documents prepared by the Contractor or its Subcontractors as at the date of termination in connection with the Facilities.

42.1.3 In the event of termination of the Contract under GCC Subclause 42.1.1, the Employer shall pay to the Contractor the following amounts:

- (a) the Contract Price, properly attributable to the parts of the Facilities executed by the Contractor as of the date of termination;
- (b) the costs reasonably incurred by the Contractor in the removal of the Contractor's Equipment from the Site and in the repatriation of the Contractor's and its Subcontractors' personnel;
- (c) any amounts to be paid by the Contractor to its Subcontractors in connection with the termination of any subcontracts, including any cancellation charges;
- (d) costs incurred by the Contractor in protecting the Facilities and leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Subclause 42.1.2; and
- (e) the cost of satisfying all other obligations, commitments and claims that the Contractor may in good faith have undertaken with third parties in connection with the Contract and that are not covered by paragraphs (a) through (d) above.

42.2 Termination for Contractor's Default

42.2.1 The Employer, without prejudice to any other rights or remedies it may possess, may terminate the Contract forthwith in the following circumstances by giving a notice of termination and its reasons therefor to the Contractor, referring to this GCC Subclause 42.2:

- (a) if the Contractor becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, if the Contractor is a corporation, a resolution is passed or order is made for its winding up, other than a voluntary liquidation for the purposes of amalgamation or reconstruction, a receiver is appointed over any part of its undertaking or assets, or if the Contractor takes or suffers any other analogous action in consequence of debt;
- (b) if the Contractor assigns or transfers the Contract or any right or interest therein in violation of the provision of GCC Clause 43; and
- (c) if the Contractor, in the judgment of the Employer has engaged in integrity violations, as defined in GCC Clause 6, in competing for or in executing the Contract.

42.2.2 If the Contractor

- (a) has abandoned or repudiated the Contract;
- (b) has without valid reason failed to commence work on the Facilities promptly or has suspended, other than pursuant to GCC Subclause 41.2, the progress of Contract performance for more than 28 days after receiving a written instruction from the Employer to proceed;
- (c) persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just cause;
- (d) refuses or is unable to provide sufficient materials, services, or labor to execute and complete the Facilities in the manner specified in the program furnished under GCC Subclause 18.2 at rates of progress that give reasonable assurance to the Employer that the Contractor can attain Completion of the Facilities by the Time for Completion as extended,

then the Employer may, without prejudice to any other rights it may possess under the Contract, give a notice to the Contractor, stating the nature of the default and requiring the Contractor to remedy the same. If the Contractor fails to remedy or to take steps to remedy the same within 14 days of its receipt of such notice, then the Employer may terminate the Contract forthwith by giving a notice of termination to the Contractor that refers to this GCC Subclause 42.2.

42.2.3 Upon receipt of the notice of termination under GCC Subclauses 42.2.1 or 42.2.2, the Contractor shall, either immediately or upon

such date as is specified in the notice of termination,

- (a) cease all further work, except for such work as the Employer may specify in the notice of termination for the sole purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition;
- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d);
- (c) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination;
- (d) to the extent legally possible, assign to the Employer all right, title and benefit of the Contractor to the Facilities and to the Plant as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors; and
- (e) deliver to the Employer all drawings, specifications, and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Facilities.

42.2.4 The Employer may enter upon the Site, expel the Contractor, and complete the Facilities itself or by employing any third party. The Employer may, to the exclusion of any right of the Contractor over the same, take over and use with the payment of a fair rental rate to the Contractor, with all the maintenance costs to the account of the Employer and with an indemnification by the Employer for all liability including damage or injury to persons arising out of the Employer's use of such equipment, any Contractor's Equipment owned by the Contractor and on the Site in connection with the Facilities for such reasonable period as the Employer considers expedient for the supply and installation of the Facilities.

Upon completion of the Facilities or at such earlier date as the Employer thinks appropriate, the Employer shall give notice to the Contractor that such Contractor's Equipment will be returned to the Contractor at or near the Site and shall return such Contractor's Equipment to the Contractor in accordance with such notice. The Contractor shall thereafter without delay and at its cost remove or arrange removal of the same from the Site.

42.2.5 Subject to GCC Subclause 42.2.6, the Contractor shall be entitled to be paid the Contract Price attributable to the Facilities executed as of the date of termination, the value of any unused or partially used Plant on the Site, and the costs, if any, incurred in protecting the Facilities and in leaving the Site in a clean and safe condition pursuant to paragraph (a) of GCC Subclause 42.2.3. Any sums due the Employer from the Contractor accruing prior to the date of termination shall be deducted from the amount to be paid to the Contractor under this Contract.

42.2.6 If the Employer completes the Facilities, the cost of completing the Facilities by the Employer shall be determined.

If the sum that the Contractor is entitled to be paid, pursuant to GCC Subclause 42.2.5, plus the reasonable costs incurred by the Employer in completing the Facilities, exceeds the Contract Price, the Contractor shall be liable for such excess.

If such excess is greater than the sums due the Contractor under GCC Subclause 42.2.5, the Contractor shall pay the balance to the Employer, and if such excess is less than the sums due the Contractor under GCC Subclause 42.2.5, the Employer shall pay the balance to the Contractor.

The Employer and the Contractor shall agree, in writing, on the computation described above and the manner in which any sums shall be paid.

42.3 Termination by Contractor

42.3.1 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 (Terms and Procedures of Payment) to the Contract Agreement, 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 Subclause 12.3, 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, fails to remedy the breach or take steps to remedy the breach within 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 or failure to obtain any governmental permit necessary for the execution and/or completion of the Facilities,

then the Contractor may give a notice to the Employer thereof, and if the Employer has failed to pay the outstanding sum, to approve the invoice or supporting documents, to give its reasons for withholding such approval, or to remedy the breach within 28 days of such notice, or if the Contractor is still unable to carry out any of its obligations under the Contract for any reason attributable to the Employer within 28 days of the said notice, the Contractor may by a further notice to the Employer referring to this GCC Subclause 42.3.1, forthwith terminate the Contract.

- 42.3.2 The Contractor may terminate the Contract forthwith by giving a notice to the Employer to that effect, referring to this GCC Subclause 42.3.2, if the Employer becomes bankrupt or insolvent, has a receiving order issued against it, compounds with its creditors, or, being a corporation, if a resolution is passed or order is made for its winding up (other than a voluntary liquidation for

the purposes of amalgamation or reconstruction), a receiver is appointed over any part of its undertaking or assets, or if the Employer takes or suffers any other analogous action in consequence of debt.

42.3.3 If the Contract is terminated under GCC Subclauses 42.3.1 or 42.3.2, then the Contractor shall immediately

- (a) cease all further work, except for such work as may be necessary for the purpose of protecting that part of the Facilities already executed, or any work required to leave the Site in a clean and safe condition;
- (b) terminate all subcontracts, except those to be assigned to the Employer pursuant to paragraph (d) (ii);
- (c) remove all Contractor's Equipment from the Site and repatriate the Contractor's and its Subcontractors' personnel from the Site; and
- (d) subject to the payment specified in GCC Subclause 42.3.4,
 - (i) deliver to the Employer the parts of the Facilities executed by the Contractor up to the date of termination;
 - (ii) to the extent legally possible, assign to the Employer all right, title, and benefit of the Contractor to the Facilities and to the Plant as of the date of termination, and, as may be required by the Employer, in any subcontracts concluded between the Contractor and its Subcontractors; and
 - (iii) deliver to the Employer all drawings, specifications, and other documents prepared by the Contractor or its Subcontractors as of the date of termination in connection with the Facilities.

42.3.4 If the Contract is terminated under GCC Subclauses 42.3.1 or 42.3.2, the Employer shall pay to the Contractor all payments specified in GCC Subclause 42.1.3, and reasonable compensation for all loss, except for loss of profit, or damage sustained by the Contractor arising out of, in connection with or in consequence of such termination.

42.3.5 Termination by the Contractor pursuant to this GCC Subclause 42.3 is without prejudice to any other rights or remedies of the Contractor that may be exercised in lieu of or in addition to rights conferred by GCC Subclause 42.3.

42.4 In this GCC Clause 42, the expression "Facilities executed" shall include all work executed, Installation Services provided, and all Plant acquired, or subject to a legally binding obligation to purchase, by the Contractor and used or intended to be used for the purpose of the Facilities, up to and including the date of termination.

42.5 In this GCC Clause 42, in calculating any monies due from the Employer to the Contractor, account shall be taken of any sum previously paid by the Employer to the Contractor under the Contract, including any advance

payment paid pursuant to the Appendix (Terms and Procedures of Payment) to the Contract Agreement.

43. Assignment

- 43.1 Neither the Employer nor the Contractor shall, without the express prior written consent of the other party which consent shall not be unreasonably withheld, assign to any third party the Contract or any part thereof, or any right, benefit, obligation, or interest therein or thereunder, except that the Contractor shall be entitled to assign either absolutely or by way of charge any monies due and payable to it or that may become due and payable to it under the Contract.

I. Claims, Disputes, and Arbitration

44. Contractor's Claims

- 44.1 If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall submit a notice to the Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

If the Contractor fails to give notice of a claim within such period of 28 days, the Time for Completion 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. Otherwise, the following provisions of this Subclause shall apply.

The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Employer's liability, the Project Manager may, after receiving any notice under this Subclause, monitor the record keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records, and shall (if instructed) submit copies to the Project Manager.

Within 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 Project Manager, the Contractor shall send to the Project Manager 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. If the event or circumstance giving rise to the claim has a continuing effect,

- (a) this fully detailed claim shall be considered as interim;

- (b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager may reasonably require; and
- (c) the Contractor shall send a final claim within 28 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.

Within 42 days after receiving a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars, but shall nevertheless give his response on the principles of the claim within such time.

Each payment certificate shall include such amounts for any claim as have been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.

The Project Manager shall agree with the Contractor or estimate (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with GCC Clause 40, and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.

The requirements of this Subclause are in addition to those of any other Subclause which may apply to a claim. If the Contractor fails to comply with this or another Subclause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Subclause.

In the event that the Contractor and the Employer cannot agree on any matter relating to a claim, either party may refer the matter to the Dispute Board pursuant to GCC 45.3 hereof.

45. Disputes and Arbitration

45.1 Appointment of the Dispute Board

Disputes shall be referred to a Dispute Board for decision in accordance with GCC Subclause 45.3. The Parties shall appoint a Dispute Board by the date stated in the SCC.

The Dispute Board shall comprise, as stated in the SCC, either one or three suitably qualified persons ("the members"), each of whom shall be fluent in the language for communication defined in the Contract and shall be a professional experienced in the type of activities involved in the performance of the Contract and with the interpretation of contractual documents. If the number is not so stated and the Parties do not agree otherwise, the Dispute Board shall comprise three persons, one of whom

shall serve as chairman.

If the Parties have not jointly appointed the Dispute Board 21 days before the date stated in the SCC and the Dispute Board is to comprise three persons, each Party shall nominate one member for the approval of the other Party. The first two members shall recommend and the Parties shall agree upon the third member, who shall act as chairman.

However, if a list of potential members is included in the SCC, the members shall be selected from those on the list, other than anyone who is unable or unwilling to accept appointment to the Dispute Board.

The agreement between the Parties and either the sole member or each of the three members shall incorporate by reference the General Conditions of Dispute Board Agreement contained in the Appendix to these General Conditions, with such amendments as are agreed between them.

The terms of the remuneration of either the sole member or each of the three members, including the remuneration of any expert whom the Dispute Board consults, shall be mutually agreed upon by the Parties when agreeing the terms of appointment of the member or such expert (as the case may be). Each Party shall be responsible for paying one-half of this remuneration.

If a member declines to act or is unable to act as a result of death, disability, resignation, or termination of appointment, a replacement shall be appointed in the same manner as the replaced person was required to have been nominated or agreed upon, as described in this Subclause.

The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Employer or the Contractor acting alone. Unless otherwise agreed by both Parties, the appointment of the Dispute Board (including each member) shall expire when the Operational Acceptance Certificate has been issued in accordance with GCC Clause 25.3.

45.2 Failure to Agree Dispute Board

If any of the following conditions apply, namely:

- (a) the Parties fail to agree upon the appointment of the sole member of the Dispute Board by the date stated in the first paragraph of GCC Subclause 45.1;
- (b) either Party fails to nominate a member (for approval by the other Party) of a Dispute Board of three persons by such date;
- (c) the Parties fail to agree upon the appointment of the third member (to act as chairman) of the Dispute Board by such date;
- (d) the Parties fail to agree upon the appointment of a replacement person within 42 days after the date on which the sole member or one of the three members declines to act or is unable to act as a result of death, disability, resignation, or termination of

appointment,

then the appointing entity or official named in the SCC shall, upon the request of either or both of the Parties and after due consultation with both Parties, appoint this member of the Dispute Board. This appointment shall be final and conclusive. Each Party shall be responsible for paying one-half of the remuneration of the appointing entity or official.

45.3 Obtaining Dispute Board's Decision

If a dispute (of any kind whatsoever) arises between the Parties in connection with the performance of the Contract, including any dispute as to any certificate, determination, instruction, opinion, or valuation of the Project Manager, either Party may refer the dispute in writing to the Dispute Board for its decision, with copies to the other Party and the Project Manager. Such reference shall state that it is given under this Subclause.

For a Dispute Board of three persons, the Dispute Board shall be deemed to have received such reference on the date when it is received by the chairman of the Dispute Board.

Both Parties shall promptly make available to the Dispute Board all such additional information, further access to the Site, and appropriate facilities, as the Dispute Board may require for the purposes of making a decision on such dispute. The Dispute Board shall be deemed to be not acting as arbitrator(s).

Within 84 days after receiving such reference, or within such other period as may be proposed by the Dispute Board and approved by both Parties, the Dispute Board shall give its decision, which shall be reasoned and shall state that it is given under this Subclause. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated, or terminated, the Contractor shall continue to proceed with the performance of the Facilities in accordance with the Contract.

If either Party is dissatisfied with the Dispute Board's decision, then either Party may, within 28 days after receiving the decision, give notice to the other Party of its dissatisfaction and intention to commence arbitration. If the Dispute Board fails to give its decision within the period of 84 days (or as otherwise approved) after receiving such reference, then either Party may, within 28 days after this period has expired, give notice to the other Party of its dissatisfaction and intention to commence arbitration.

In either event, this notice of dissatisfaction shall state that it is given under this Subclause, and shall set out the matter in dispute and the reason(s) for dissatisfaction. Except as stated in GCC Subclauses 45.6 and 45.7, neither Party shall be entitled to commence arbitration of a dispute unless a notice of dissatisfaction has been given in accordance with this Subclause.

If the Dispute Board has given its decision as to a matter in dispute to

both Parties, and no notice of dissatisfaction has been given by either Party within 28 days after it received the Dispute Board's decision, then the decision shall become final and binding upon both Parties.

45.4 Amicable Settlement

Where notice of dissatisfaction has been given under GCC Subclause 45.3 above, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, arbitration may be commenced on or after the 56th day after the day on which notice of dissatisfaction and intention to commence arbitration was given, even if no attempt at amicable settlement has been made.

45.5 Arbitration

Unless settled amicably, any dispute in respect of which the Dispute Board's decision (if any) has not become final and binding shall be finally settled by international arbitration. Unless otherwise agreed by both Parties,

- (a) arbitration proceedings shall be conducted as stated in the Special Conditions;
- (b) if no arbitration proceedings is so stated, the dispute shall be finally settled by institutional arbitration under the Rules of Arbitration of the International Chamber of Commerce;
- (c) the dispute shall be settled by three arbitrators; and
- (d) the arbitration shall be conducted in the language for communications defined in GCC Subclause 5.3.

The arbitrator(s) shall have full power to open up, review, and revise any certificate, determination, instruction, opinion, or valuation of the Project Manager, and any decision of the Dispute Board, relevant to the dispute. Nothing shall disqualify the Project Manager from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.

Neither Party shall be limited in the proceedings before the arbitrator(s) to the evidence or arguments previously put before the Dispute Board to obtain its decision, or to the reasons for dissatisfaction given in its notice of dissatisfaction. Any decision of the Dispute Board shall be admissible in evidence in the arbitration.

Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the Project Manager, and the Dispute Board shall not be altered by reason of any arbitration being conducted during the progress of the Works.

45.6 Failure to Comply with Dispute Board's Decision

In the event that a Party fails to comply with a Dispute Board decision which has become final and binding, then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under GCC Subclause 45.5. GCC Subclauses 45.3 and 45.4 shall not apply to this reference.

45.7 Expiry of Dispute Board's Appointment

If a dispute arises between the Parties in connection with the performance of the Contract, and there is no Dispute Board in place, whether by reason of the expiry of the Dispute Board's appointment or otherwise,

- (a) GCC Subclauses 45.3 and 45.4 shall not apply, and
- (b) the dispute may be referred directly to arbitration under GCC Subclause 45.5.

APPENDIX A

General Conditions of Dispute Board Agreement

1 Definitions

Each "Dispute Board Agreement" is a tripartite agreement by and between

- (a) the "Employer";
- (b) the "Contractor"; and
- (c) the "Member" who is defined in the Dispute Board Agreement as being
 - (i) the sole member of the "Dispute Board" and, where this is the case, all references to the "Other Members" do not apply; or
 - (ii) one of the three persons who are jointly called the "Dispute Board" (or "dispute board") and, where this is the case, the other two persons are called the "Other Members".

The Employer and the Contractor have entered (or intend to enter) into a contract, which is called the "Contract" and is defined in the Dispute Board Agreement, which incorporates this Appendix. In the Dispute Board Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract.

2 General Provisions

Unless otherwise stated in the Dispute Board Agreement, it shall take effect on the latest of the following dates:

- (a) the Commencement Date defined in the Contract;
- (b) when the Employer, the Contractor and the Member have each signed the Dispute Board Agreement; or
- (c) when the Employer, the Contractor and each of the Other Members (if any) have respectively each signed a dispute board agreement.

This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 days' notice of resignation to the Employer and to the Contractor, and the Dispute Board Agreement shall terminate upon the expiry of this period.

3 Warranties

The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Project Manager. The Member shall promptly disclose, to each of them and to the Other Members (if any), any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

When appointing the Member, the Employer and the Contractor relied upon the Member's representations that he/she is

- (a) experienced in the work, which the Contractor is to carry out under the Contract,
- (b) experienced in the interpretation of contract documentation, and
- (c) fluent in the language for communications defined in the Contract.

4 General Obligations of the Member

The Member shall

- (a) have no interest financial or otherwise in the Employer, the Contractor or the Project Manager, nor any financial interest in the Contract except for payment under the Dispute Board Agreement;
- (b) not previously have been employed as a consultant or otherwise by the Employer, the Contractor, or the Project Manager, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Board Agreement;
- (c) have disclosed in writing to the Employer, the Contractor, and the Other Members (if any), before entering into the Dispute Board Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer, or employee of the Employer, the Contractor, or the Project Manager, and any previous involvement in the overall project of which the Contract forms part;
- (d) not, for the duration of the Dispute Board Agreement, be employed as a consultant or otherwise by the Employer, the Contractor, or the Project Manager, except as may be agreed in writing by the Employer, the Contractor, and the Other Members (if any);
- (e) comply with the annexed procedural rules and with GCC Subclause 45.1;
- (f) not give advice to the Employer, the Contractor, the Employer's Personnel, or the Contractor's Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;
- (g) not while a Member enter into discussions or make any agreement with the Employer, the Contractor, or the Project Manager regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Board Agreement;
- (h) ensure his/her availability for all site visits and hearings as are necessary;
- (i) become conversant with the Contract and with the progress of the Facilities (and of any other parts of the project of which the Contract forms part) by studying all documents received, which shall be maintained in a current working file;
- (j) treat the details of the Contract and all the Dispute Board's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Employer, the Contractor, and the Other Members (if any); and
- (k) be available to give advice and opinions on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members (if any).

5 General Obligations of the Employer and the Contractor

The Employer, the Contractor, the Employer's Personnel and the Contractor's Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the Dispute Board's activities under the Contract and the Dispute Board Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's Personnel and the Contractor's Personnel respectively.

The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members (if any)

- (a) be appointed as an arbitrator in any arbitration under the Contract;
- (b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or
- (c) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member's functions, unless the act or omission is shown to have been in bad faith.

The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.

Whenever the Employer or the Contractor refers a dispute to the Dispute Board under GCC Subclause 45.3, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.

6 Payment

The Member shall be paid as follows, in the currency named in the Dispute Board Agreement:

- (a) a retainer fee per calendar month, which shall be considered as payment in full for
 - (i) being available on 28 days' notice for all site visits and hearings;
 - (ii) becoming and remaining conversant with all project developments and maintaining relevant files;
 - (iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and
 - (iv) all services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.

The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Board Agreement becomes effective; until the last day of the calendar month in which the Taking- Over Certificate is issued for the whole of the Works.

With effect from the first day of the calendar month following the month in which Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by one-third. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Board Agreement is otherwise terminated.

- (b) a daily fee, which shall be considered as payment in full for
 - (i) each day or part of a day up to a maximum of 2 days' travel time in each direction for the journey between the Member's home and the site, or another location of a meeting with the Other Members (if any);
 - (ii) each working day on site visits, hearings, or preparing decisions; and
 - (iii) each day spent reading submissions in preparation for a hearing.
- (c) all reasonable expenses, including necessary travel expenses (air fare in less than first class, hotel, and subsistence and other direct travel expenses) incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, facsimiles, telexes, and use of the internet: a receipt shall be required for each item in excess of 5% of the daily fee referred to in subparagraph (b) of this Clause;
- (d) any taxes properly levied in the Country on payments made to the Member (unless a national or permanent resident of the Country) under this Clause 6.

The retainer and daily fees shall be as specified in the Dispute Board Agreement. Unless it specifies otherwise, these fees shall remain fixed for the first 24 calendar months, and shall thereafter be adjusted by agreement between the Employer, the Contractor and the Member, at each anniversary of the date on which the Dispute Board Agreement became effective.

If the parties fail to agree on the retainer fee or the daily fee, the appointing entity or official named in the SCC shall determine the amount of the fees to be used.

The Member shall submit invoices for payment of the monthly retainer and air fares quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a site visit or hearing. All invoices shall be accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.

The Contractor shall pay each of the Member's invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Board Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the Dispute Board; and without prejudice to the Employer's rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in accordance with GCC Subclause 12.3.

If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received, and/or (ii) resign his/her appointment by giving notice under Clause 7.

7 Termination

At any time: (i) the Employer and the Contractor may jointly terminate the Dispute Board Agreement by giving 42 days' notice to the Member, or (ii) the Member may resign as provided for in Clause 2.

If the Member fails to comply with the Dispute Board Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.

If the Employer or the Contractor fails to comply with the Dispute Board Agreement, the Member may, without prejudice to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

8 Default of the Member

If the Member fails to comply with any of his obligations under Clause 4 concerning his impartiality or independence in relation to the Employer or the Contractor, he/she shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members (if any), for proceedings or decisions (if any) of the Dispute Board are rendered void or ineffective by the said failure to comply.

9 Disputes

Any dispute or claim arising out of or in connection with this Dispute Board Agreement, or the breach, termination, or invalidity thereof, shall be finally settled by institutional arbitration. If no other arbitration institute is agreed, the arbitration shall be conducted under the Rules of Arbitration of the International Chamber of Commerce by one arbitrator appointed in accordance with these Rules of Arbitration.

Annex - DISPUTE BOARD GUIDELINES

1. Unless otherwise agreed by the Employer and the Contractor, the Dispute Board shall visit the site at intervals of not more than 140 days, including times of critical construction events, at the request of either the Employer or the Contractor. Unless otherwise agreed by the Employer, the Contractor, and the Dispute Board, the period between consecutive visits shall not be less than 70 days, except as required to convene a hearing as described below.
2. The timing of and agenda for each site visit shall be as agreed jointly by the Dispute Board, the Employer, and the Contractor, or in the absence of agreement, shall be decided by the Dispute Board. The purpose of site visits is to enable the Dispute Board to become and remain acquainted with the progress of the Works and of any actual or potential problems or claims, and, as far as reasonable, to prevent potential problems or claims from becoming disputes.
3. Site visits shall be attended by the Employer, the Contractor, and the Project Manager and shall be coordinated by the Employer in cooperation with the Contractor. The Employer shall ensure the provision of appropriate conference facilities and secretarial and copying services. At the conclusion of each site visit and before leaving the site, the Dispute Board shall prepare a report on its activities during the visit and shall send copies to the Employer and the Contractor.
4. The Employer and the Contractor shall furnish to the Dispute Board one copy of all documents which the Dispute Board may request, including Contract documents, progress reports, variation instructions, certificates, and other documents pertinent to the performance of the Contract. All communications between the Dispute Board and the Employer or the Contractor shall be copied to the other Party. If the Dispute Board comprises three persons, the Employer and the Contractor shall send copies of these requested documents and these communications to each of these persons.
5. If any dispute is referred to the Dispute Board in accordance with GCC Subclause 45.3, the Dispute Board shall proceed in accordance with GCC Subclause 45.3 and these Guidelines. Subject to the time allowed to give notice of a decision and other relevant factors, the Dispute Board shall
 - (a) act fairly and impartially as between the Employer and the Contractor, giving each of them a reasonable opportunity of putting his case and responding to the other's case; and
 - (b) adopt procedures suitable to the dispute, avoiding unnecessary delay or expense.
6. The Dispute Board may conduct a hearing on the dispute, in which event it will decide on the date and place for the hearing and may request that written documentation and arguments from the Employer and the Contractor be presented to it prior to or at the hearing.
7. Except as otherwise agreed in writing by the Employer and the Contractor, the Dispute Board shall have power to adopt an inquisitorial procedure, to refuse admission to hearings or audience at hearings to any persons other than representatives of the Employer, the Contractor, and the Project Manager, and to proceed in the absence of any party who the Dispute Board is satisfied received notice of the hearing; but shall have discretion to decide whether and to what extent this power may be exercised.
8. The Employer and the Contractor empower the Dispute Board, among other things, to:
 - (a) establish the procedure to be applied in deciding a dispute;
 - (b) decide upon the Dispute Board's own jurisdiction, and as to the scope of any dispute referred to it;

- (c) conduct any hearing as it thinks fit, not being bound by any rules or procedures other than those contained in the Contract and these Guidelines;
 - (d) take the initiative in ascertaining the facts and matters required for a decision;
 - (e) make use of its own specialist knowledge, if any;
 - (f) decide upon the payment of financing charges in accordance with the Contract;
 - (g) decide upon any provisional relief such as interim or conservatory measures;
 - (h) open up, review and revise any certificate, decision, determination, instruction, opinion or valuation of the Project Manager, relevant to the dispute; and
 - (i) appoint, should the Dispute Board so consider necessary and the Parties agree, a suitable expert at the cost of the Parties to give advice on a specific matter relevant to the dispute.
9. The Dispute Board shall not express any opinions during any hearing concerning the merits of any arguments advanced by the Parties. Thereafter, the Dispute Board shall make and give its decision in accordance with GCC Subclause 45.3, or as otherwise agreed by the Employer and the Contractor in writing. If the Dispute Board comprises three persons
- (a) it shall convene in private after a hearing, in order to have discussions and prepare its decision;
 - (b) it shall endeavour to reach a unanimous decision: if this proves impossible the applicable decision shall be made by a majority of the Members, who may require the minority Member to prepare a written report for submission to the Employer and the Contractor; and
 - (c) if a Member fails to attend a meeting or hearing, or to fulfil any required function, the other two Members may nevertheless proceed to make a decision, unless
 - (i) either the Employer or the Contractor does not agree that they do so, or
 - (ii) the absent Member is the chairman and he/she instructs the other Members to not make a decision.

Section 8 - Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC. The clause numbers of the SCC correspond to the clause number of the GCC.

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1. Definitions

The “**Employer**” is: **National Grid Company of Pakistan (NGC), formerly National Transmission & Despatch Company Limited (NTDC)**

The Project Manager is: **Chief Engineer (EHV), North, NGC, Islamabad
WAPDA Mega Hydro Project Building, Kashmir Chowk,
Club Road, Islamabad
Phone # +92-051-9214564
Fax # +92-51-9214563
E-Mail: ceehvisd@ntdc.com.pk**

The Consultant is: **Shall be nominated later.**

The Bank is: **Asian Development Bank (ADB)**

The word "Works" is synonymous with the words "Installation Services" wherever appearing in the Bidding Documents.

The word “Goods” is synonymous with the word “Plant” wherever appearing in the Bidding Document.

Country of Origin: Eligible countries as specified in Article 1.1(d) of Contract Agreement.

“Biodiversity Action Plan (BAP)” is a strategic framework that identifies, prioritizes, and outlines specific measures to conserve, protect, and enhance biodiversity in a given project, area, or region.

“Environmental Impact Assessment” or EIA means the environmental impact assessment prepared for the site, including any update thereto, incorporated in the Initial Environmental Examination (IEE).

“Environmental Management Plan” or EMP means the environmental management plan for the site, including any update thereto, incorporated in the Initial Environmental Examination (IEE).

“Initial Environmental Examination” or IEE means the initial environmental examination for the site, including any update thereto, prepared and submitted by the Employer and cleared by ADB.

“Land Acquisition and Resettlement Framework” or LARF means the land acquisition and resettlement framework prepared for the PTSP-II-A to lay out the principles and objectives governing the preparation and implementation of Land Acquisition and Resettlement Plans (LARP) for involuntary resettlement impacts due to the investment program for each Tranche.

“Land Acquisition and Resettlement Plan” or LARP means the land acquisition and resettlement plan for the site or a section thereof, including any update thereto, prepared by the Employer and cleared by ADB. “Resettlement Plan” or RP means the land

acquisition and resettlement plan for the site or a section thereof, including any update thereto, prepared by the Employer and cleared by ADB.

“Section” means any geographic part of the site, smaller than the site. The site may have several sections.

“Semi-annual safeguards monitoring report” or SSMR means the report prepared by Employer on a bi-annual basis and verified by an external monitoring expert to provide an update on overall progress in social safeguards implementation at the project level, including the status of land acquisition and resettlement implementation progress, site handover status and need for corrective actions (if any).

“Local/Locally” Local means pertaining to, or originating within, the territory of Pakistan in which the project is located. Local labor. Laborers, workers, or employees (unskilled, semi-skilled, or skilled) who are legally entitled to work in, and are ordinarily resident within, the Country.

“Local participation” Local participation refers to the use of local labor and local jobs creation and local skills development in the performance of the contract.

The Sub-Clause 1.1 (d) is replaced by: “SCC” means the document entitled Special Conditions of Contract included in the Contract, which consists of Part A – Environmental, Health, and Safety (EHS) Metrics for Progress Reports, and Part B – Key Performance Indicators (KPI) (if applicable), Part C – Bonuses (if applicable).”

4. Communications

For Notices, the Employer's Address shall be:

Chief Engineer (EHV), North, NGC, Islamabad
WAPDA Mega Hydro Project Building, Kashmir Chowk, Club Road, Islamabad
Phone # +92-051-9214564
Fax # +92-51-9214563
E-Mail: ceehvisd@ntdc.com.pk

5. Law and Language

- 5.1 The Contract shall be interpreted in accordance with the laws of: Islamic Republic of Pakistan.
- 5.2 The ruling language is: English Language
- 5.3 The language for communications is: English Language

7. Scope of Facilities

- 7.3 Not Applicable

8. Time for Commencement and Completion

- 8.1 The Contractor shall commence work on the Facilities within 20 days from the Effective Date for determining Time for Completion as specified in the Contract Agreement provided that access to and possession of the Site or any part thereof have been given under subclause 10.2, and shall then proceed with the work on the Facilities with due expedition and without delay.
- 8.2 The Time for Completion of whole of the Facilities shall be 28 months from the Effective Date as described in the Contract Agreement.

8.3 Foundation Construction

- (a) The Employer shall issue an affected persons list and vouchers to the Contractor within six (6) weeks after the submission by the Contractor of the final route and detailed design;
- (b) The Contractor shall pay each of the affected persons on the list referred to in sub-paragraph (a) above within three (3) weeks of receipt of the list from the Employer;
- (c) In order to gain access to the whole Site or, if using a Sectional Approach, parts of the Site for the sole purpose of **foundation construction** the Contractor must submit to the Employer:
 - I. In case of Sectional Approach, within 28 days of Effective Date:
 - a) Proposed sections; stating number of sections, length of each section and a route map;
 - b) A program that states:
 - 1. submission dates for the detailed design of each section; and
 - 2. Site access dates for each section,
 - II. If a Sectional Approach is not being utilized, the detailed design and final route of the transmission line.
 - III. bank records (or where applicable, other documentation) within the 3 weeks referred to in sub-paragraph (b) as proof of payment to affected persons for the relevant section of the Site or whole site, as the case may be.
- (d) Within 7 weeks after the Employer received all of the documentation referred to in paragraph (c) above, the Employer shall issue a Notice to Proceed (NTP) to the Contractor to access the whole Site or relevant section of Site for the purpose of **foundation construction only**.
- (e) The Contractor shall only access the Site and commence relevant works on the foundation construction once it has received the NTP referred to in sub-paragraph (d) from the Employer.

8.4 Tower Erection

- a) Within four (4) weeks after the Employer has provided the NTP to the Contractor for the foundation construction, the Employer shall:
 - 1. Notify the Contractor of any residual LARP impact relating to construction of foundations and issue a affected persons list and vouchers; and
 - 2. Issue to the Contractor a revised (based on impacts relating to tower erections) affected persons list and vouchers. The contractor must pay affected persons and submit bank records (or where applicable, other documentation) within 3 weeks to the employer as proof of payment to affected persons
- b) The Contractor shall:
 - 1. pay each of the affected persons on the list referred to in sub-paragraphs (a)(1) or (2); and
 - 2. submit bank records (or where applicable, other documentation) evidencing such payment, within 3 weeks of receipt of the list referred to in sub-paragraphs (a)(1) or (2) to the Employer.
- c) Within seven (7) weeks after the Employer has received the relevant documents referred to in paragraph (b), the Employer will Issue a Notice to Proceed (NTP) to the Contractor to commence construction activities related to **erection of towers only**.
- d) The Contractor shall commence relevant works on the tower erection once it has received the NTP referred to in sub-paragraph (c) from the Employer.

8.5 Line stringing

- a) Within four (4) weeks after the Employer has provided the NTP for the tower erection to

the Contractor, the Employer shall:

1. Notify the Contractor of any residual LARP impact relating to erection of towers and issue an affected persons list and vouchers. Utilizing the affected persons list and vouchers issued to the contractor by the employer, the contractor must pay affected persons and submit bank records (or where applicable, other documentation) within 3 weeks to the employer as proof of payment to affected persons.
 2. Issue to the Contractor a revised (based on impacts relating to tower erections) affected persons list and vouchers. The contractor must pay affected persons and submit bank records (or where applicable, other documentation) within 3 weeks to the employer as proof of payment to affected persons.
- b) The Contractor shall:
1. pay each of the affected persons on the list referred to in sub-paragraphs (a)(1) or (2); and
 2. submit bank records (or where applicable, other documentation) evidencing such payment, within 3 weeks of receipt of the list referred to in sub-paragraphs (a)(1) or (2) to the Employer.
- c) Within seven (7) weeks after the Employer has received the relevant documents referred to in paragraph (b), the Employer shall issue a Notice to Proceed (NTP) to the Contractor to commence construction activities related to line stringing.
- d) The Contractor shall only commence relevant works on the line stringing once it has received the NTP referred to in sub-paragraph (c) from the Employer.

9. Contractor's Responsibilities

9.2 The following paragraph is added at the end of Sub-Clause 9.2:

"The Employer does not guarantee the correctness of any data provided herein nor any interpretations, deductions or conclusions relative to subsurface conditions at Site. The Contractor must form his own opinion of the character of the work and of the materials to be excavated. He must make his own interpretations, and satisfy himself by his own investigations and research regarding all conditions affecting the work to be done. The Contractor must assume all responsibility for deductions and conclusions as to the nature or conditions of the materials to be excavated and of doing other work affected by the geology at the Site.

9.6 The following paragraph is added at the end of Sub-Clause 9.6:

"ADB's right to inspect the Site and/or the Contractor's accounts and records relating to the performance of the Contract stated in Subclause 6.1 (e) and 9.6 shall survive termination and/or expiration of this Contract."

9.8 Protection of Environment

Following are added at the end of sub-clause 9.8:

- (c) The Contractor will ensure that the preparation, design, construction, implementation, operation, restoration and commissioning of project comply with the following:
- All applicable laws and regulations of Pakistan relating to environment, health, and safety;
 - All measures and requirements set forth in the respective EIA/IEE and LARP/RAP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.
 - The Contractor shall comply with all applicable national, provincial, and local environmental laws and regulations.
 - The Contractor shall also comply with all reasonable requests of the national and local authorities responsible for enforcing environmental controls.
 - Within 28 days of the Commencement Date the Contractor shall submit a detailed Site

Specific Environmental Management Plan (SSEMP), based on the Environmental Health and Safety Management Plan submitted in the technical proposal, for the Project Manager's no objection showing how the Contractor intends to comply with environmental laws and regulations and other specific requirements prescribed in the Contract, addressing all the monitoring and mitigation measures set forth in the Environmental Impact Assessment ("EIA") and the Environmental Management Plan ("EMP") of the project attached in Section 6- Employer's Requirements. Work shall not commence on the Site until the no objection of SSEMP has been obtained from the Project Manager and is being implemented.

- The Contractor shall (a) establish an operational system for managing environmental impacts, (b) comply with the approved SSEMP and any corrective or preventative actions set out in safeguards monitoring reports that the Employer will prepare from time to time to monitor the implementation of the project EMP through the SSEMP, (c) allocate the budget required to ensure that such measures, requirements and actions are carried out, (d) submit semi-annual reports on the compliance of such measures to the Employer.
- Where unanticipated environmental risks or impacts become apparent during the Contract, the Contractor is required to update the SSEMP to outline the potential impacts to site works and associated mitigation measures for the Project Manager's approval."

(d) Environmental Safeguards

Contractor(s) shall ensure that:

- (a) A qualified Site Environmental Officer is appointed within twenty-eight (28) days of the Effective Date. The Environmental Officer shall commence work immediately upon appointment to prepare the safeguard management documents required under paragraph (b).
- (b) The Site-Specific Environmental Management Plan (EMP), Waste Management Plan and Environmental Management & Monitoring Plan (EMMP) implementation schedule covering all project facilities and activities (including transmission line right-of-way, substations, access roads, construction camps, borrow pits, and storage areas) - shall be prepared shall be prepared by a qualified Environmental Specialist and submitted to the Employer for review and approval no later than thirty (30) days prior to Contractor mobilization to Site. The plans shall comply with the conditions of the Environmental Approval issued by the respective EPA, the requirements of ADB's Safeguard Policy (2009), and EIA/IEEs. Mobilization shall not commence until the Employer has approved these documents in writing.
- (c) The Contractor shall ensure full and continuous implementation of the approved EMP across all aspects of the works, including design, construction, operation, and site restoration, and covering all project facilities and activities (e.g., right-of-way, substations, access roads, construction camps, borrow pits, and storage areas);
- (d) All mitigation and monitoring measures specified in the approved EMMP shall be fully incorporated into the detailed design, construction method statements, work schedules, and operational procedures, and shall be continuously implemented throughout construction and operation of the Project Facilities;
- (e) All subcontracts under the Project shall contain binding provisions requiring compliance with paragraph (d). However, the Contractor shall remain fully responsible for ensuring that all EMMP requirements are complied with by its subcontractors, suppliers, and partners.
- (f) Adequate and dedicated budget shall be allocated and maintained to fully implement all environmental and social measures required under paragraph (d), and this allocation shall be reflected in the Contractor's work plans and cost estimates.
- (g) The Contractor shall immediately notify the Employer in writing of any unanticipated environmental, resettlement or indigenous people's related-risks or impacts arising during construction, implementation or operation of the project that were not covered in the

approved EIA/IEE or the LARP/RAP. Such notification shall include a description of the incident or risk, its potential or actual impact, and proposed immediate corrective measures.

- (h) Tree plantation is carried out in accordance with the Environmental Approval obtained from respective environmental protection agency (EPA), and consistent with the aesthetic value of the area, before issuance of the completion certificate.
- (i) All invoices or claims related to Environment & Social Safeguards Management are submitted to the Employer for verification.
- (j) Monthly and quarterly monitoring and implementation reports are submitted to the Employer, in a format agreed with the Employer.
- (k) Personal protective equipment - including helmets, gloves, shoes, glasses, and safety vests - is provided by the Contractor to all workers before commencement of relevant works.
- (l) Safety signs and awareness material in both Urdu & English (4 x 6 feet Panaflex) are prominently displayed at the Project Site.
- (m) Pathways, local infrastructure (e.g., sewerage line, water supply lines, rainwater drainage system), and agricultural and damaged due to construction activities at the project site are restored to at least their pre-project condition upon completion of works.
- (n) Adequate sanitation facilities and clean drinking water are provided to all personnel on Site.
- (o) Quarterly water testing, air quality monitoring, and noise measurement are conducted by an EPA-approved laboratory (subject to Employer's prior NOC for the selected lab), with results submitted to the Employer.
- (p) Full compliance with all conditions set forth in an Environmental approval/NOC issued by respective EPA.
- (q) Upon completion of works, the Contractor shall restore all affected lands to its pre-work conditions or better, prior to returning lands to affected persons, with restoration verified through project completion and safeguard monitoring reports.

(e) Land Acquisition & Resettlement:

The contractor(s) will ensure that all applicable laws and regulations of Pakistan relating to (a) Land acquisition and involuntary resettlement; (b) Involuntary Resettlement Safeguards; (c) LARF; and (d) all measures and requirements set forth in the respective LARP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report and strictly adhered to and ensure that:

- a) A Social Safeguards Specialist is appointed with relevant educational background and experience;
- b) Implementation of Land Acquisition & Resettlement Plan (LARP)/Resettlement Action Plan (RAP) is fully implemented;

(f) Safeguards:

- a) The Contractor shall provide information and awareness at all worksites on the risks of sexually transmitted diseases (STDs) including HIV/AIDS to all personnel employed during construction. The Contractor shall implement appropriate prevention and protection measures in line with national health regulations and good international industry practices, to minimize workers potential exposure to STDs. Records of such activities shall be maintained and made available to the Employer upon request;
- b) There is no differentiation between men and women wages or benefits for work of equal value;

- c) It abstains from child labor; and
- d) The Contractor (where possible) shall employ in the project construction works, the interested members of project affected households that are identified as vulnerable and/or severely affected by involuntary resettlement impact of the project, as feasible based on required skills. The Project Manager shall provide to the Contractor(s) the list of work-able persons from the identified vulnerable and severely affected households interested in employment in the project works.

10. Employer's Responsibilities

- 10.2 There shall be no work nor construction activities at the Site or any part thereof (as the case may be) unless the Employer/Project Manager has granted access to the Site or part thereof (as the case may be) in accordance with this Subclause 10.2.

11. Contract Price

- 11.2 The Contract Price shall be adjusted in accordance with the provisions of Appendix 2 (Price Adjustment) to the Contract Agreement.
- 11.3 The following new sub clauses are added:
- (a) The quantities given in the Price Schedules are tentative/estimated. The Contractor shall be paid for actual quantities installed in accordance with the unit rates given in the Price Schedules.
 - (b) Price of any other item not covered specifically in the Price Schedules but is required for the completion; commissioning and operation of the transmission line shall be deemed to be included in the Price Schedules.
 - (c) If as a result of sub-soil investigation, it is required to install a spread foundation or a pile foundation of type other than specified, it will be designed by the contractor without any additional cost to Employer. Cost of installation of such foundation shall be valued for payment to the Contractor in accordance with the provisions of the contract.

12. Terms of Payment

The following is added at the end of Sub-Clause 12.4:

The Contractor is required to submit an assessment of the Contractor's compliance with requirements assessed and/or measured based on the KPIs, if applicable. If the Contractor fails to meet any requirements assessed using the Key Performance Indicators (KPI) set out in Part B – Performance Damages and/or Part C – Bonuses of the Particular Conditions, if applicable, as determined by the Project Manager, necessary adjustments to the payments shall be made.

13. Securities

- 13.3.1 The amount of performance security shall be Ten percent (10%) of the Contract Price excluding Provisional Sums.
- 13.2.2 The Performance Security shall be denominated in the currencies of the Contract and shall be in the form of the Unconditional Bank Guarantee as per form attached hereto in the Section 9 (Contract Forms). The Performance Security shall be issued by (a) any reputable bank in Pakistan, which includes any Scheduled Bank, or (b) a reputable bank located outside Pakistan duly counter-guaranteed by a corresponding bank in Pakistan to make it enforceable.
- 13.3.3 The performance security shall not be reduced on the date of the Operational Acceptance.

14. Taxes and Duties

14.2 This Sub-Clause is replaced by the following:

- For the Goods to be offered from outside the Purchaser's country, all taxes, duties and other leviables in Pakistan on the finished Goods shall be paid by the Purchaser subject to the condition that material shipped is in the name of NGC (formerly NTDC) and NGC (formerly NTDC) WeBOC is used.
- For the Goods to be offered from within the Purchaser's country, the price shall be inclusive of all taxes, duties and other levies in Pakistan except Sales Tax on the finished Goods. Contractor will submit the invoice inclusive of Sales Tax. Sales Tax shall be charged by the Contractor and payments shall be subject to Withholding Rules specified in 11th Schedule of Sales Tax Act, 1990. Copy of sales tax return will be provided by the Contractor. The payments/ reimbursement of Sales Tax will only be made if Invoice is in name of NGC (formerly NTDC) and NGC (formerly NTDC) can claim input from FBR.
- For the Goods to be transported within the Purchaser's country, the price of Inland Transportation shall be paid/reimbursed on submission of proof of payment of Sales Tax.
- Contractor will submit the invoice inclusive of Provincial Sales Tax. Provincial Sales Tax shall be charged by the Contractor and payments will be subject to the income tax and sales tax withholding as per Rules mentioned in Federal or Respective Provincial Laws. Copy of sales tax return will be provided by the Contractor.

Custom Duties & Taxes at port shall be initially paid by the contractor and the same shall be reimbursed as per actual by the Employer using its own funds if the material shipped is in the name of NGC (formerly NTDC) and NGC (formerly NTDC) WEBOC is used.

Taxes (GST & PST if applicable)

General Sales Tax and Provincial Sales Tax, if levied & applicable on finished local goods and services respectively shall be charged by the Contractor and payments will be subject to Withholding as per Rules mentioned in Respective Federal or Provincial Laws. Copy of sales tax return shall be provided by the Contractor. The payments of PST/GST Shall only be made if NGC (formerly NTDC) can claim input from relevant Tax Authority (ies).

Notes:

- The Bidder to confirm that their prices include all direct taxes applicable in their country and in Employers' country.
- Foreign Firms/Companies/Contractors, if required as per law of the country will get them registered from relevant tax authorities after award of the Contract.
- All payments (including advance) will be subject to withholding Taxes as per Income Tax Ordinance, 2001/international Tax Treaty & Sales Tax Act. 1990, further, payments shall made only to those entities appearing in Active Taxpayer List (ATL) for both Income Tax & Sales Tax.
- Advance Payment Guarantee and Performance Guarantee will be exclusive of indirect taxes.

Tax Treatise will be considered between Pakistan and Contractors' country (if applicable).

Following new Sub-Clauses are added:

14.5 Local Taxation

The rates and prices quoted by the Contractor in the Price Schedules shall be deemed to have included (i) business taxes, income tax or taxes on income and profits, (ii) fees charged for services provided under this Contract, and (iii) all non-reimbursable fees, duties & taxes provided under Clause 14.11 except for those sums reimbursable under Clause 14.10 hereof.

14.6 Categories of Plant

Plant and material imported by the Contractor into Pakistan for the purpose of or in connection with this Contract, are categorized as below:

Category "A"

Plant and all other material imported by the Contractor and transported directly from the port of entry in Pakistan to the Site for incorporation in the Facilities, and which when accepted will become the property of the Employer.

It is clarified that raw materials and components imported for the purpose of manufacturing indigenous Plant under this Contract and materials which will become part of reinforced concrete foundations or pile foundations (such as reinforcing steel bars, cement etc.) shall not be treated under this Category.

Category "B"

All equipment and materials imported by the Contractor which is the property of the Contractor, and ultimately will be exported out of Pakistan.

Category "C"

All equipment and material imported by the Contractor which is the property of the Contractor, and which ultimately will be sold in Pakistan.

The rate of import duty on Categories "B" and "C" will be the applicable rates at the time of import into Pakistan and will be paid in full by the Contractor at such time.

The Contractor shall obtain and pay for export permits or licenses, and all charges for exportation of the Goods, equipment and materials from the country of origin or export to Pakistan for Categories A, B and C under this Contract.

14.7 Goods imported under Category "A"

The Contractor shall obtain and pay for import license and permit fee for- importation of the Plant, Equipment and Mandatory Spare parts falling under Category 'A'. The Employer will assist the Contractor in this respect, if required.

The Contractor shall pay for Pakistani customs duties, sales taxes and surcharge applicable to the importation of Goods and other materials falling under Category "A".

The sums paid for the above will be reimbursed by the Employer to the Contractor pursuant to Sub-Clause 14.10 hereof.

- (1) Fees for import licenses or permits and Pakistani import duties, sales taxes, surcharge and fees on Goods and other material falling under Category "A" , in excess of the Contract Value (CIP) consigned under "No Charge" invoicing shall be payable by the Contractor and shall not be reimbursed.
- (2) A "No Charge" invoice is required by the Customs authorities giving CIP value of each consignment involved so that the correct import duties etc. can be assessed.
- (3) All import clearance permits for Goods and other material falling under Category "A" will be obtained by the Contractor. Upon arrival of each consignment of such imported Goods and other material falling under Category "A" the Contractor shall arrange for the customs examination and clearance thereof. All charges including charges for loading, unloading and forwarding expenses shall be borne by the Contractor.
- (4) The Contractor shall pay all costs paid for any storage, demurrage, or penalties imposed due to delay in submission of documents, incorrect or incomplete documents and noncompliance with State Laws.

14.8 Goods imported under Category "B"

It shall be the sole responsibility of the Contractor to arrange import, clear, handle, transport to the site and re-export from Pakistan and complete all connected Government formalities in

respect of returnable equipment and/or material. All the above activities connected with import and re-export of the returnable equipment and/or material will be handled by the Contractor independent of the Employer. Accordingly, all charges such as import license or permit fee, opening of L/C, if any, payment of customs duties, surcharges and sales taxes at the time of importation, port clearance charges, wharf age, demurrage, octroi, transportation charges to the site and similar charges connected with the re-export of returnable equipment and/or material shall be borne by the Contractor. The Contractor shall be responsible for the repatriation of such equipment and/or material within the stipulated time. The Contractor shall also be responsible for obtaining N.O.C. from the Ministry concerned for banned or restricted items.

14.9 Goods imported under Category "C"

- (1) It shall be the sole responsibility of the Contractor to import, clear handle and transport equipment and material falling under Category "C" to the Site and complete all concerned Government formalities in respect thereof
- (2) The Employer will assist in obtaining the import permits for Category "C" if so required by the Contractor.
- (3) Permission of the Government of Pakistan shall be arranged by the Contractor prior to the sale in Pakistan to any person or organization except the Employer of any equipment and material falling under Category "C". The Employer will have the first option to purchase the equipment and material falling under Category "C".

14.10 Reimbursements to the Contractor

- A. The Employer will reimburse to the Contractor all such sums as the Employer shall certify to have been properly payable (actual without any overhead charges and profits) and paid by the Contractor in respect of the following:

The Contractor shall, in all matters arising in the performance of the contract, comply in all respects with, give all notices and pay all fees required by the provisions of any national or state statute, ordinance or other law or any regulation or bye-law of any duly constituted authority.

1. Any fees paid in compliance with GC sub-clause 10.4, other than fees charged for services or facilities provided. It is clarified that fees paid in respect of import permits or licenses on Plant falling under Category "A" shall be reimbursable under the provisions of this clause.
2. Non-exempt Pakistani customs duties, sales taxes, duties and surcharges on Plant imported by the Contractor into Pakistan for the purpose of or in connection with this Contract falling under Category "A" provided that the Contractor shall not be entitled to reimbursement of any customs duty or sales tax or duty surcharge in respect of which he might by due and timely application to the appropriate authority, have obtained exemption under State Laws, i.e. Government of Pakistan SROs issued from time to time, which give details about exemption concerning import of various plants, material etc.
3. Any additional duties and taxes other than Pakistani customs duties and sales taxes and duty surcharges imposed by the Government of Pakistan on Plant falling under Category "A" imported by the Contractor into Pakistan for the purpose of or in connection with this Contract after the date 28 days prior to the fixed date for opening of Bids for the facilities. The provisions of this Para 3 shall not apply to food, tobacco, liquor and other commissary goods and other personal articles imported by the Contractor for use or consumption of his employees.
4. Sales tax, excise duty and other similar taxes levied upon finished plant and Mandatory Spare Parts supplied from within the Employer's country (Schedule No. 2) by the Contractor for the purpose of this Contract (excluding material forming part of tower foundations such as reinforcing steel bars, concrete etc), provided the Contractor/Manufacturer /Employer are not exempted from payment of these duties and

taxes or these duties and taxes are not refundable to the Contractor/Manufacturer/Employer.

- B. The Contractor shall make all endeavors to avail all applicable concessions and exemptions and in case of failure, the Contractor shall be held responsible.

14.11 Non-Reimbursable Fees, Duties and Taxes

The Contractor shall not be entitled to any reimbursement by the Employer in respect of the following:

1. Any fees charged for services or facilities paid in compliance with the provisions of Sub-clause 14.10(A)1 hereof. By way of illustration but not enumeration; any fees or moneys paid in respect of port or wharfage dues, pilotage charges, anchorage charges, clearance charges, vehicle registration fees, insurance fees, road taxes, octroi charges, bramdat charges, Professional and Trade tax, education cess, group insurance and old age benefits etc., are deemed to be included in the rates and prices entered in the Price Schedules and will not be reimbursable.
2. All equipment and materials in categories A, B and C as defined in Sub-Clause 14.6 hereof, shall be subjected to Karachi Municipal Corporation (KMC) tax levy (if applicable) to be paid by the Contractor. When shipment passes the KMC limits within 8 hours, the Contractor shall be responsible to obtain refund of said tax. However should the Contractor fail to pass shipment within 8 hours after issuance of port certificate, the KMC tax will be solely to the Contractor's account.
3. Pakistani customs duties, sales taxes, duty surcharges including Iqra surcharge and fees for import permits or licenses in respect of Contractor's Equipment and Goods (under Categories B and C), spare parts and consumables and other articles imported by his employees or food, tobacco, liquor and other commissary goods, Contractor's vehicles and other personal articles imported by the Contractor for use or consumption of his employees.
4. Any element of duty or income tax or super tax and other taxes on income, inherent in the price of locally procured goods and services in Pakistan. All these duties or taxes shall be deemed to be included in the rates and prices entered in the Price Schedules, and
5. In case partial or total exemption of any duty or tax is permissible on Plant falling under Category "A" and Contractor's Equipment in any case due to Government rules and regulations which the Contractor can get by due and timely application to the appropriate authority and the Contractor fails to get this exemption then the payment made by the Contractor of duties and taxes to the extent of exemption permissible will not be reimbursed.

14.11.1 Exempted Duties and Taxes

In case of refundable duties and taxes, if any, the Contractor shall arrange the payment and secure the refund himself from the concerned agencies. In case of taxes and duties, for which the Employer or the Contractor is eligible for exemption under the Contract, such exemption shall be obtained by the Contractor at his own expenses. The Employer shall not be liable to pay to the Contractor amounts that may be paid by him towards any exempted taxes and duties. However, the Employer shall assist the Contractor in obtaining such exemptions.

14.11.2 Statement of Reimbursements

The Contractor shall submit to the Employer after end of each month a statement giving detailed analysis of the amount paid by him during that month in respect of duties and taxes and local body charges for which he is entitled for reimbursements under Sub-Clause 14.10 hereof.

14.12 Foreign Taxation

The prices quoted by the Contractor shall be deemed to have included all taxes, duties and

other charges imposed outside Pakistan on the production, manufacture, sale and transport of the Plant including, Erection and Testing Equipment and Maintenance Tools, Spare Parts, Contractor's Equipment, materials and supplies to be furnished or used under the Contract, and on the services performed under the Contract. All such taxes and duties levied outside the territory of Pakistan shall be to the account of the Contractor.

14.13 Port Charges and Port Congestion

The Contractor shall be deemed to have obtained all information regarding facilities and charges, in respect of port clearance, loading and unloading, storage, transportation, congestion and confirmed the requirements thereof at his own responsibility and all such costs and charges are deemed to be included in the Price Schedules.

14.14 Advance Income Tax

1. Deductions of Advance Income Tax from the amount of bill payable except for the reimbursement provided under the Contract shall be made in accordance with the prevalent income tax laws of the Government of Pakistan. Deductions made for this purpose will be deposited by the Employer in the Government treasury to the credit of Contractor's account.
2. The Contractor may however, make a timely application to the appropriate Government authority to obtain an exemption under the State Laws from having these deductions made. If such an exemption is granted to the Contractor in respect of this Contract he shall notify the Employer in writing giving all details. The Employer will then be able to make payments without the deduction of advance income tax.

14.15 Payment of Income Tax

The Contractor shall be responsible for the payment of all Pakistani income tax or taxes on income & profits arising out of the Contract, and the rates and prices stated in the Price Schedules shall be deemed to cover all such taxes.

14.16 Personal Taxes and Duties

The Contractor or his personnel shall pay all personal income tax or other taxes due in Pakistan, if any, for the personnel employed by the Contractor for implementing the work or any other activity required by the Contract. The Contractor shall obtain, at his own cost, work permits from competent authorities to enable any foreign personnel to work in Pakistan. The Contractor shall be responsible for all formalities in connection with passports, obtaining visas, police permits, and expenses for customs duties, if any, related to personal goods of foreign personnel employed on the Project. However, the Employer will, if requested, assist the Contractor in obtaining visas and work permits.

17. Representatives

17.1 The following text is added at the end of this sub-Clause:

The Project Manager shall obtain the specific prior approval of the Employer for taking any of the following actions:

- (i) Granting any extension of time for completion under Clause 40;
- (ii) Suspension of work under Clause 41;
- (iii) Completion Certificate under Clause 24;
- (iv) Operational Acceptance Certificate under Clause 25;
- (v) Issuing a change order under Clause 39, except in emergency situation, as reasonably determined by the Project Manager.
- (vi) if in the opinion of the Project Manager an emergency occurs affecting the safety of life or of the facilities or of adjoining properties he may direct the Contractor to carry out all

such work or to do all such things as may be necessary in the opinion of the Project Manager to abate or reduce the risk. The Contractor shall forthwith comply without appeal with any such direction of the Project Manager. The Project Manager shall determine the amount (if any) of extra payment to which the Contractor may be entitled in accordance with the Contract in respect of work done pursuant to the provisions of this Sub-Clause 22.6 and the Employer would be bound by any such determination by the Project Manager regarding extra payment

- (vii) Change in Technical Specifications.

Following is added at the end of sub-clause 17.2.6:

- 17.2.7 The Contractor shall establish an independent office in Pakistan, headed by the Contractor's Representative, at a place determined in consultation with the Employer's Representative".

18. Work Program

- 18.2 The form of the Program of Performance of the Contract shall be: Bar / Gantt Chart or Critical Path Method (CPM), the PERT network, in MS Project.

- 18.3 Add the following subparagraph at the end of sub-Clause 18.3 of the GCC:

and (c) monitoring of the obligations in Sub-Clause 9.8, 9.9, 21.1, 22.1.1, 22.2.3 (d), 22.2.7 (d), 22.2.15 and 22.2.16.

19. Subcontracting

- 19.3 Text of the last sentence "the Contractor may employ ... at its discretion." is deleted and replaced by "the Contractor may however propose SubContractor and submit qualification documents to Project Manager for approval."

The following sub-clause is added after sub-clause 19.5:

- 19.6 If any SubContractor executes any installation which, in the opinion of the Project Manager, is not in accordance with the Contract, the Project Manager shall notify the Contractor and the Contractor shall forthwith rectify and remedy such installation and ensure the execution of the installation by the SubContractor in accordance with the Contract. However, if the action taken is not to the satisfaction of the Project Manager, then the Project Manager may by written notice to the Contractor re-quire him to terminate such Subcontract and the Contractor, upon receipt of such notice, shall terminate such Subcontract and dismiss the SubContractor and arrange for the SubContractor forthwith to leave the Site.
- 19.7 The Contractor shall not assign any manufacturing work for any Plant or part thereof to any firm other than the Manufacturer(s) named in the Appendix 5 to the Contract Agreement titled List of Major Items of Plant and Installation Services and List of Approved SubContractors. In unavoidable circumstance, prior approval of the Employer shall be obtained by the Contractor for assigning any manufacturing work to a manufacturer not named as such in the Contract. Nothing contained in the Contract shall create any contractual relationship or professional obligation between any manufacturer and the Employer. Onus of any discrepancy in the manufacture shall be on the Contractor.

20. Design & Engineering

- 20.3 Approval/Review of Technical Documents by Project Manager

- 20.3.1 Add the following at the end of the second paragraph:

The sign board design shall be considered to relate to the whole of the Facilities. Hence, no work related to the Facilities shall commence until the Project Manager has given (or

is deemed to have given) his approval to the sign board design and until the sign board(s) have been properly installed in the agreed location(s) at the Site.

20.3.2 Within 21 days after receipt by the Project Manager of any document requiring the Project Manager's approval in accordance with GCC Subclause 20.3.1, 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 21 days, then the said document shall be deemed to have been approved by the Project Manager.

21. Procurement

21.1 Materials:

Add following text at the end of Sub-Clause 21.1;

The Contractor shall adequately record (using latest techniques of video recording and site photographs) the condition of roads, agricultural land and other infrastructure prior to the start of transporting materials, goods and equipment for construction.

22. Installation

22.2.1 Engagement of Staff and Labor

Following are added at the end of 22.2.1;

- e) The Contractor shall provide the Contractor's Personnel information and documentation that are clear and understandable regarding their terms and conditions of employment. The information and documentation will be provided at the beginning of the working relationship. The information and documentation shall set out their rights under relevant labor Laws and the project's Labor Management Plan applicable to the Contractor's Personnel (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation, and benefits, as well as those arising from any requirements in the Specification. The Contractor's Personnel shall be informed when any material changes to their terms or conditions of employment occur.
- f) The Contractor shall provide project workers a written notice of termination of employment and details of severance payments in a timely manner, and in accordance with the requirements of the applicable Laws and the project's labor management plan.
- g) The Contractor shall ensure up-to-date employment records are kept that respect the rights of Contractor's Personnel to privacy and data protection.
- h) The Contractor is further responsible for ensuring that subcontractors comply with these standards and that all contracted workers have access to the grievance mechanism.
- i) The Contractor shall maintain open communication channels with workers, providing timely updates on employment conditions and project changes. Workers shall be informed of their rights and responsibilities in a language they understand.
- j) The Contractor shall maintain HR policies and labor management systems proportionate to workforce size and risk, ensuring clarity, accessibility, and compliance with applicable Laws and Employer requirements.
- k) The Contractor is required to ensure that no less than 50% of the Contractor's Personnel consists of local labor.

22.2.3 Labor Laws

Following subparagraph is added in Sub-Clause 22.2.3;

- (d) The Contractor shall not make employment decisions based upon personal characteristics unrelated to job requirement. The Contractor shall base the employment relationship upon equal opportunity and fair treatment, and shall not

discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment or retirement, and discipline.

22.2.4 Rates of Wages and Conditions of Labor

The following paragraph is added:

- (c) The Contractor shall pay wages in legal tender, on time, and in full. Deductions must be lawful and transparent. Its staff, labour and other employees shall receive written wage information and records shall be maintained. The Contractor shall comply with labor and social security laws. Obligations shall not be avoided through labor-only contracting. Written contracts outlining terms of employment, wages, working hours (including overtime), safe and healthy working environment and benefits must be provided in a language understood by its staff, labour and other employees.

22.2.5 Working Hours

- a) Normal working hours are: Eight (08) hours per day.

22.2.7 Health and Safety

Following subparagraph is added in Sub-Clause 22.2.7 (a);

- i. "The Contractor is responsible for establishment of preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks of the construction site work to the health and safety of local communities.
- ii. Within 28 days of the Effective Date the Contractor shall submit a detailed Site Specific Environmental, Health, and Safety Management Plan (SSEHSMP) and all the required site-specific EHS management documents based on the Bidder's Environmental, Health, and Safety Management Plan (Bidder's EHSMP) and other Bidder's EHS management documents submitted in the technical proposal, for the Project Manager's no objection showing how he/she intends to comply with the local Health and Safety laws and regulations and other specific requirements prescribed in the Contract, taking into account the Supplementary Information in Section 6- Employer's Requirements, and addressing all the monitoring and mitigation measures set forth in the project's EIA, EHSMP, Labor Management Plan (LMP) and other relevant EHS assessment and management documents of the project attached in Section 6 – Employer's Requirements. Work shall not commence on the Site until the confirmation of no objection of the SSEHSMP and other relevant site-specific EHS management documents has been obtained from the Project Manager and is being implemented.
- iii. Where unanticipated health and safety hazards or risks become apparent during the Contract, the Contractor is required to update the SSEHSMP and other relevant site-specific EHS management documents to outline the potential impacts to site works and associated mitigation measures for the Project Manager's no objection.
- iv. The Contractor shall comply with the approved SSEHSMP and other relevant site-specific EHS management documents.
- v. In particular, the Contractor is required to provide all personnel on site including Employer's Personnel and visitors with personal protective equipment, including protection for feet (safety boots), head, eyes, ears (safety helmets) and hands, etc., in accordance with the Contractor's SSEHSMP and other relevant site-specific EHS management documents. The Contractor should ensure that his Subcontractors comply with the SSEHSMP and other relevant site-specific EHS management documents and provide all such necessary equipment to their personnel.

- vi. The Contractor shall bear the costs to ensure that such measures, requirements and actions are carried out.
- vii. The Contractor shall submit semi-annual reports on the compliance of such measures to the Employer.”

Following subparagraph is added in Sub-Clause 22.2.7 (c);

“In the event of a significant injury involving medical treatment or hospitalization and fatal accident the Contractor shall notify the Project Manager immediately by verbal communication and submit a formal report as soon as practicable after its occurrence. For all accidents, whether fatal or not, the Contractor shall also notify the appropriate local authorities in accordance with the Laws of the Country.”

Following subparagraph is added in Sub-Clause 22.2.7;

- (d) The Contractor shall throughout the contract (including the Defect Liability Period),
 - (i) Conduct Information, Education, and Consultation Communication (IEC) campaigns, at least every other month, addressed to all the Site staff and labor (including all the Contractor’s employees, all Subcontractor’s and Employer’s and Project Manager’s employees, and all truck drivers and crew making deliveries to Site for construction activities) and to the immediate local communities, concerning the risks, dangers, and impact, and appropriate avoidance behavior with respect to Sexually Transmitted Diseases (STD)—or Sexually Transmitted Infections (STI) in general and HIV/AIDS in particular;
 - (ii) Provide male or female condoms for all Site staff and labor as appropriate; and
 - (iii) Provide for STI and HIV/AIDS screening, diagnosis, counseling, and referral to a dedicated national STI and HIV/AIDS program, (unless otherwise agreed) of all Site staff and labor.

The Contractor shall include in the program to be submitted for the execution of the Facilities under Sub-Clause 18.2 of GCC an alleviation program for Site staff and labor and their families in respect of Sexually Transmitted Infections (STI) and Sexually Transmitted Diseases (STD) including HIV/AIDS. The STI, STD, and HIV/AIDS alleviation program shall indicate when, how, and at what cost the Contractor plans to satisfy the requirements of this Sub clause and the related specification. For each component, the program shall detail the resources to be provided or utilized and any related subcontracting proposed. The program shall also include provision of a detailed cost estimate with supporting documentation. Payment to the Contractor for the preparation and implementation of this program shall not exceed the amount dedicated for this purpose.

22.2.8 Funeral Arrangements

Funeral arrangements: the Contractor shall be full responsible for making appropriate arrangement

22.2.16 Prohibition of Harmful Child Labor

The Contractor shall not employ any child to perform any work, including 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. “Child” means a child below the statutory minimum age of 14 (fourteen) as specified under applicable national, provincial or local law of Islamic Republic of Pakistan.

Following new sub-clauses 22.2.17 and 22.2.18 are added after 22.2.16:

22.2.17 Respectful Work Environment

The Contractor shall ensure that its employees and sub-Contractors observe the highest ethical standards and refrain from any form of bullying, discrimination, misconduct and harassment, including sexual harassment and shall, at all times, behave in a manner that creates an environment free of unethical behavior, bullying, misconduct and harassment, including sexual harassment. The Contractor shall take appropriate action against any employees or sub-Contractors, including suspension or termination of employment or sub-contract, if any form of unethical or inappropriate behavior is identified.

The Contractor shall conduct training programs for its employees and sub-Contractors to raise awareness on and prevent any form of bullying, discrimination, misconduct and harassment including sexual harassment, and to promote a respectful work environment. The Contractor shall keep an up to date record of its employees and subContractors who have attended and completed such training programs and provide such records to the Employer or the Consultant at their first written request.

22.2.18 Freedom of Speech

The Contractor shall allow freedom of association and effectively recognize the right to collective bargaining. The Contractor shall not discourage the Contractor's Personnel from forming or joining workers' organisations of their choosing or from bargaining collectively and shall not discriminate or retaliate against the Contractor's Personnel who participate, in such organisations and bargaining collectively. The Contractor shall engage with such workers' representatives. Workers' organisations are expected to fairly represent the workers in the workforce.

22.4 The following new paragraph is added:

The Contractor shall provide security to his own staff and supervisory staff of Employer and Project Manager at the Site.

23. Test and Inspection

All the material / equipment (civil /electrical /mechanical) to be installed / used at the works shall be subject to testing /pre-shipment inspection in line with the requirements of relevant specification(s). The following Sub – clauses shall supplement the relevant GCC clause 23, in case of any contradiction the latter shall prevail.

- 23.2 Two authorized representatives of the Chief Engineer (T/L Design) shall carry out pre-shipment inspection of the plant/material/equipment at manufacturer's works at Employer's expense. However, all reasonable facilities (laboratory, tools, instruments, machines, samples etc) as provided in the specifications or followed by Trade & Industry in general shall have to be offered to the Inspecting officers by Manufacturer/Contractor at his expense for carrying out Testing and Inspection. The Contractor shall keep the Employer, Chief Engineer (T/L Design) and Project Manager informed on the progress of manufacturing and notify Chief Engineer (T/L Design) approximately eight (08) weeks in advance, in writing as to when the Plant or any part thereof will be ready for inspection.

If the Plant fails to withstand any test performed at manufacturer's works, the cost of repeating failed tests and the cost (boarding, lodging, daily allowance of Euro 150/day/inspector, return air ticket, visa expense, local transport etc.) of witnessing such test by the approved two Nos. representatives/ Inspector of the Chief Engineer (T/L Design) shall be borne by the Contractor and the equipment released or modified to the satisfaction of the Employer, without any additional cost to the Employer.

- 23.3 The text appearing in second and third line reading as "a reasonable advance notice of such test and / or inspection" is replaced with text "eight (8) weeks' advance notice to carry out any test

and / or inspection abroad and four (4) weeks' advance for any test and / or inspection within Pakistan".

The following new paragraph is added at the end of this Sub-Clause:

The Chief Engineer (T/L Design) will issue the test and / or Inspection Certificate including Pre-shipment Certificate on successful completion of testing and / or inspection of plant and equipment, after the receipt of test and / or inspection report including Pre-shipment Inspection Report from the Contractor.

- 23.4 The text "after issuance of Letter of Waiver by the Employer to ensure timely shipment" may be added in 2nd para at the end of fourth line before ",".

In the last line after the word "thereof" add the text "before shipment. The Goods and any part thereof shall be shipped or delivered only upon issuance of Pre-shipment Inspection Certificate or Letter of Waiver to Pre-shipment Inspection."

- 23.5 The following sentence is added at the end of Sub-Clause:

"The Contractor shall carry out all the required tests according to relevant standards".

- 23.6 In case the type test reports furnished by the bidder/contractor are not from one of independent testing laboratories as specified in NGC's (formerly NTDC) type test policy or are not relevant to the equipment offered or do not meet or comply with the ratings and other requirements of the Purchaser's Specifications included in Volume 2 and relevant standards, the bidder shall have to arrange necessary type testing before delivering equipment/plant without effecting the delivery/completion period as mentioned in sub-clause hereof. In case of delay or non-compliance of the said requirements, the Employer reserves the right to proceed as per clause 42.2.2(D) including encashment of performance guarantee and initiate the process for blacklisting as per the Employer's SoP for blacklisting. Moreover, cost of carrying out type tests and the cost (boarding, lodging, daily allowance of Euro 150/day/inspector, return air ticket, visa expense, local transport etc.) of witnessing such test by the approved two Nos. representatives/ Inspector of the Employer [one from Chief Engineer (T/L Design) and one from Project Manager] shall be borne by the Contractor and the equipment released or modified to the satisfaction of the Employer, without any additional cost to the Employer.

Any inspection and/or witnessing of tests or the waiving of such tests and/or surveillance by the Employer, Chief Engineer (T/L Design) and Project Manager shall not relieve the Contractor of its obligations and responsibilities under the Contract regardless of any approval consent given by the Employer and Project Manager.

All work covered by the Contract shall be subject to surveillance, testing and inspection by two representatives/Inspector(s) of the Employer, Chief Engineer (T/L Design) and Project Manager. The Inspectors may require witnessing any or all the tests to be carried out. For such purpose the Manufacturer/Contractor shall provide free access at all times during manufacture, assembly and testing to the premises in which the work is being carried out.

The following sub-clause is added after sub-clause 23.11:

- 23.12 The Plant or any part thereof shall be shipped or delivered only upon an authorization in writing (hereinafter called the "Notice to Deliver") which shall be applied for and obtained by the Contractor from the Project Manager stipulating that the Plant or any part thereof may be shipped or delivered. The Notice to Deliver will be issued within seven (07) days from the date of receipt by the Project Manager of the Contractor's valid application for request for "Notice to Deliver".

24. Completion of the Facilities

Following new sub-clause 24.9 is added:

- 24.9 Upon the completion of construction, the Contractor shall fully reinstate pathways, the local infrastructure, and agricultural land to at least their pre-project condition as recorded by the Contractor in consonance with its obligation in Sub-Clause 21.1 hereof.

25. Commissioning and Operational Acceptance

25.2 This Sub-Clause "Guarantee Test" is deleted in its entirety.

25.3.1 The GCC Sub-Clause 25.3.1 is substituted by the following:

Subject to GC Sub-Clause 25.4 below, Operational Acceptance shall occur in respect of the Facilities or any part thereof when:

- a) any minor items mentioned in GCC Sub-Clause 24.7 hereof relevant to the Facilities or that part thereof have been completed; and
- b) As Built Drawings (Records Drawings) and data as mentioned in Sub-Clause SI-06.3.7 of Section-6 "Employer's Requirements" have been furnished; and
- c) Material Reconciliation Report (MRR) as per Sub-Clause SI-06.3.8 of Section-6 Employer's Requirements" of this Bidding Documents has been furnished; and
- d) Goods Receipt Note (GRN) / Store Return Slip (SRS) duly issued by the in-charge of designated warehouse of NGC regarding receipt of balance material of the Project as per MRR, and
- e) Certificate from the in-charge of the NGC warehouse regarding completeness and healthiness of the returned balance material has been furnished.

26. Completion Time Guarantee

26.2 Applicable rate for liquidated damages: 0.05 % of the Contract Price per day

Maximum deduction for liquidated damages: 10% of the Contract Price.

26.3 No bonus will be given for earlier Completion of the Facilities or part thereof.

27. Defect Liability

27.2 In second paragraph the words "as the Contractor shall determine at its discretion," are replaced with the words "as the Contractor shall, with the consent of the Employer, determine".

27.4 The word "Employer" is replaced with the word "Employer / Project Manager".

27.10 The critical components covered under the extended defect liability are _____ and the period shall be _____. *(Not Applicable)*

The following sub-clause is added after sub-clause 27.10:

27.11 When the Defect Liability Period for the Facilities or any part thereof has expired and the Contractor has fulfilled all his obligations under the Contract for defects in the Facilities or that part, the Employer shall issue within seven (07) days a Defect Liability Period Certificate to that effect to the Contractor.

28. Functional Guarantees

This Sub-Clause "Functional Guarantees" is deleted in its entirety.

30. Limitation of Liability

30.1 (b) The multiplier of the Contract Price is: [1.5]

31. Transfer of Ownership

31.3 The following is added at the end:

"Nevertheless, Contractor's Equipment shall not be removed from the Site without prior consent of the Employer."

34. Insurance

Following new sub-clauses are added in Clause 34:

34.8 Should a loss be sustained, the Contractor shall replace or repair any loss or damage at his own cost and complete the Facilities in accordance with the Contract as soon as possible after occurrence of such loss or damages, without waiting for the settlement of the insurance claim.

34.9 Contractor to Notify Insurers

1. It shall be the duty of the Contractor to notify the insurer of any insurances referred to above of any matter or event which by the terms of such insurance are required to be so notified. All formalities in connection with insurance surveys (s) shall be the sole responsibility of the Contractor. The Contractor shall indemnify and keep indemnified Employer against all loss, claims, demands, proceedings, costs, charges and expenses whatsoever arising out of or resulting from any default by the Contractor avoidance of any such insurance or otherwise.
2. In case of any insurance claim, the Contractor shall pursue the insurance claim if any, till such time final settlement of such insurance claims is affected.

34.10 Currency of Insurance

All Policies of Insurance under the Contract, shall provide for payment of indemnity to be made in such amounts as will allow making good the loss of or damage to the whole or any part of Facilities, or other requirements under the Contract and in a freely convertible currency.

34.11 Procurement of Insurance Policies

1. The Contractor shall procure insurance policies from an insurer acceptable to the Employer.
2. The Contractor shall submit to the Project Manager for review, the draft of the insurance policies to be procured under this Contract as soon as possible after receipt of Notifications of Award so that terms of the Policies may be agreed and approved by the Employer.

34.12 Loss not Covered

The Contractor shall bear the Excess/Deductibles and loss not covered by the insurance in accordance with his responsibility under the Contract.

35. Unforeseen Conditions

35.3 The following text is added at the end:

"In addition to notice of any Unforeseeable physical conditions, the Contractor shall provide the Project Manager with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Plant or Permanent Works, which were not considered in the initial environmental examination or the environmental management plan or the RP".

39. Change in the Facilities

39.2.6 At the end of first sentence the following text is added:

"Including Contractor's Site and general overhead costs of the Contract".

The following sub-clause is added after sub-clause 39.3:

- 39.4 **“For the removal of doubt, it is declared that any increase or decrease of the estimated quantities set out in the Price Schedule ascertained by measurement in accordance with the provisions of the Contract is not a change order within the meaning of this Clause GCC 39”.**

42. Termination

42.1 Termination for Employer’s Convenience

- 42.1.3 (f) **a reasonable amount of profit for the parts of the Works not executed by the Contractor as at the date of termination.**

45. Disputes and Arbitration

- 45.1 The Dispute Board shall be appointed within 28 days after the Effective Date.

The Dispute Board shall be three (03) members.

List of potential Dispute Board members is to be mutually decided by the Contractor and the Employer at the time of signing of the contract.

- 45.2 Appointment (if not agreed) to be made by: Chairman, Pakistan Engineering Council.

- 45.5 Rules of procedure for arbitration proceedings:

- (a) Contracts with foreign Contractors:

International arbitration shall be conducted in accordance with the rules of Singapore International Arbitration Centre (SIAC).

Arbitration shall be administered by SIAC.

The place of arbitration shall be the place of the institution administering the arbitration.

- (b) Contracts with Contractors being nationals of the Employer’s country:

Any dispute between the Employer and a Contractor who is a national of the Employer's country arising in connection with the present contract shall be referred to adjudication or arbitration in accordance with the laws of the Employer's country.

46. Eligibility

- 46
- 46.1 The Contractor shall have the nationality of an ADB member country. The Contractor shall be deemed to have the nationality of a country if the Contractor is a citizen or is constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related services.
- 46.2 The materials, equipment and services to be supplied under the Contract shall have their origin in eligible source countries and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Employer's request, the Contractor may be required to provide evidence of the origin of materials, equipment and services.
- 46.3 For purposes of SCC 46.2, “origin” means the place where the materials and equipment are mined, grown, produced or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its basic characteristics or in purpose or utility from its components.

Part A – Environmental, Health, and Safety (EHS)

Metrics for regular reporting:

a. Incidents for Nonconformance

- (i) Environmental incidents or nonconformance with contract requirements as defined in EMP, including contamination, pollution, or damage to ground or water supplies, air, and soil;
- (ii) Health and safety incidents, accidents, injuries that require treatment, and all fatalities;
- (iii) Interactions with regulators: identify agency, dates, subjects, outcomes (report the negative if none).

b. Status of All Permits and Agreements

- (i) Work permits: number required, number received, and actions taken for those not received;
- (ii) Status of permits and consents:
 - (a) List areas and facilities with permits required (quarries, asphalt, and batch plants), dates of application, dates issued (actions to follow up if not issued), dates submitted to resident engineer (or equivalent), and status of area (waiting for permits, working, abandoned without reclamation, decommissioning plan being implemented, and others).
 - (b) List areas with landowner agreements required (borrow and spoil areas, camp sites), dates of agreements, and dates submitted to resident engineer (or equivalent).
 - (c) Identify and highlight major activities and environmental and health and safety mitigation measures undertaken in each area in the reporting period (such as land clearing, provisioning of temporary access, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation).
 - (d) For quarries: indicate status of relocation and compensation (completed, or details of activities and current status in the reporting period).
 - (e) List parts of the Site for which Notice to commence work and confirmation by the Employer as per Sub-Clause 10.2 [*Employer's Responsibilities*] was received by the Contractor and the other parts of the Site for which such Notice is pending.

c. Compliance

- (i) Compliance status for conditions of all relevant consents and permits for the Work, including quarries, and others: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance;
- (ii) Compliance status of SSHSMP (as per Sub-Clause 22.2.7 [*Health and Safety*] and SSEMP as per Sub-Clause 9.8 [*Protection of the Environment*]): statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance; and
- (iii) Other unresolved issues from previous reporting periods related to environmental and social: continued violations, continued failure of equipment, continued lack of vehicle covers, spills not dealt with, continued compensation or blasting issues, and others. Cross-reference other sections as needed.

d. Supervision

- (i) Environmental and Social Supervision
 - (a) Environmental specialist: number of days worked, areas inspected, number of inspections of each (road section, work camp, accommodations, quarries, borrow areas, spoil areas, swamps, forest crossings, and others), highlights of activities and findings (including violations of environmental requirements/best practices, actions taken), and reports to environmental specialist, construction, and site management;
 - (b) Social Specialist and Community liaison person(s): number of days worked (hours community center is open), number of people met, highlights of activities (issues raised, and others), and reports to specialist, construction, and site management.
- (ii) Health and Safety Supervision
 - (a) Health and Safety specialist: number of days worked, number of full and partial inspections, and reports to construction and project management;
 - (b) Number of workers, work hours, metric of personal protection equipment (PPE) use (percentage of workers with full PPE, partial, and others), worker violations observed (by type of violation, PPE or otherwise), warnings given, repeat warnings given, and follow-up actions taken (if any);
 - (c) Number of partial and full site inspections (by area: road section, work camp, accommodations, quarries, borrow areas, spoil areas, work site, clinic, HIV/AIDS center, community centers, and others), highlights of activities (including violations of environmental, health and safety and social requirements observed, actions taken), and reports to health and safety specialist, construction, and site management.

e. Worker Accommodations

- (i) Number of expats housed in accommodations and number of locals;

- (ii) Date of last inspection and highlights of inspection including status of accommodations' compliance with national and local laws and good practice, including sanitation, space, and others; and
- (iii) Actions taken to recommend or require improved conditions, or to improve conditions.

f. Training

- (i) Number of new workers, number receiving induction training, and dates of induction training;
- (ii) Number and dates of toolbox talks, number of workers receiving training related to Environmental, Health, and Safety (EHS);
- (iii) Number and dates of communicable diseases (including sexually transmitted diseases [STDs]) sensitization and/or training, number of workers receiving training (in the reporting period and in the past), and same questions for gender sensitization and flag person training; and
- (iv) Number and date of EHS-related prevention sensitization and/or training events, including number of workers receiving training on EHS Code of Conduct for Contractor's Personnel (in the reporting period and in the past), and others.

g. Grievances

List of EHS-related grievances: grievances from affected communities and Worker grievances as recorded in the Contractor's grievance redress mechanism; traffic, road safety, and vehicles and equipment (health and safety or safeguard or environmental specialist needs to provide these requirements):

- (i) Traffic and road safety incidents and accidents involving project vehicles and equipment: provide date, location, damage, cause, follow-up;
- (ii) Traffic and road safety incidents and accidents involving nonproject vehicles or property (also reported under immediate metrics): provide date, location, damage, cause, and follow-up; and

h. Overall condition of vehicles or equipment (subjective judgment by environmental specialist and social specialist); nonroutine repairs and maintenance needed to improve safety and/or environmental and social performance (to control smoke, and others). Mitigations and Issues (what has been done):

- (i) Environmental Mitigations
 - (a) Dust: number of working bowsters, number of watering per day, number of complaints, warnings given by environmentalist, actions taken to resolve; highlights of quarry dust control (covers, sprays, operational status); percentage of rock and spoil lorries with covers, and actions taken for uncovered vehicles;
 - (b) Erosion control: controls implemented by location, status of water crossings, environmentalist inspections and results, actions taken to resolve issues, and emergency repairs needed to control erosion or sedimentation;
 - (c) Quarries, borrow areas, spoil areas, asphalt plants, batch plants: identify major activities undertaken in the reporting period at each, and highlights of environmental protection—land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, and decommissioning implementation;
 - (d) Blasting: number of blasts (and locations), status of implementation of blasting plan (including notices, evacuations, and others), and incidents of off-site damage or complaints (cross-reference other sections as needed);
 - (e) Spill clean-ups, if any: material spilled, location, amount, actions taken, and disposal (report all spills that result in water or soil contamination);
 - (f) Waste management: types and quantities generated and managed, including amount taken off-site (and by whom) or reused, recycled, or disposed on-site;
 - (g) Details of tree plantings and other mitigations required undertaken in the reporting period;
 - (h) Details of water and swamp protection mitigations required undertaken in the reporting period;
 - (i) The Contractor shall identify and report on any special or temporary right of way and any additional facility that have temporary and/or permanent impacts on affected persons' assets, access to assets, and/or livelihoods (income sources). It shall put in place corresponding mitigation measures, and implement them;
 - (j) Restoration of the environment due to damage caused by the construction activities

- (ii) Health and Safety Mitigations
 - (a) Occupational Health and Safety (OHS): Implement OHS Plan; provide and enforce PPE use; conduct safety inspections and toolbox talks.
 - (b) compliance status of labor management plan and prevention, mitigation, and response measures: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance.
 - (c) Establish systems to monitor their own employment practices and the practices of any appointed sub-contractors.
 - (d) Workforce Management: Ensure all workers have valid contracts, are registered, and receive induction on EHS code of conduct and grievance mechanism.
 - (e) Worker Accommodation and Welfare: Maintain compliant, gender-segregated, and hygienic accommodation with clean water, sanitation, and waste systems.
 - (f) Grievance Mechanism: Maintain and publicize Contractor's personnel grievance mechanism and grievance mechanism for the project; ensure anonymity and timely resolution of worker grievances.
 - (g) Training and Capacity Building: Conduct training on OHS, labour rights, and respectful workplace behaviour.
 - (h) Contractor and Subcontractor Compliance: monitor contractors for compliance with labor, OHS, and welfare standards.
 - (i) Child and Forced Labor Prevention: Screen workforce; monitor supply chain; remediate any violations immediately.
 - (j) Details of hazard prevention and control mitigations required undertaken in the reporting period.

Part B – Performance Damages

1. General

The Key Performance Indicators (KPIs) listed here shall be assessed and/or measured accordingly and financial deductions shall be applied. The following are in addition to Liquidated Damages, covering both Liquidated Damages pertaining to Completion Time and Functional Guarantees as defined under Sub-Clauses 26.3 and 28.3, respectively.

2. Assessment of KPI

Unless explicitly specified otherwise within the KPI (e.g. quantitative KPIs), all qualitative KPIs will be assessed as follows.

KPIs will be assessed and/or measured and then scored according to the established measurement methodology, using four categories: Unsatisfactory, Partially Meeting Expectations, Satisfactory Performance, and Outstanding Performance. Each assessment shall be conducted initially by the Contractor, reported in its monthly (or Final as applicable) payment statements, and shall be reviewed and decided by the Project Manager. [A sample table is given below]

KPI	Description of KPI	Rating	Justification (the Contractor)	Comments (the Project Manager)
1. [...]	[...]	Assign the relevant one from <i>Unsatisfactory, Partially meeting expectations, Satisfactory performance, Outstanding performance</i>		
2. [...]	[...]			
3. [...]	[...]			

The Parties agree that financial deductions shall be imposed only in the event of unsatisfactory performance or partial fulfillment of expectations, as described below. The expectations shall be assessed based on the requirements of the Contract or the Bid of the Contractor (which was evaluated under MPC), whichever sets a higher standard or any changes arising during implementation which have been approved by the Project Manager as appropriate.

The cumulative deductions under this Part B shall not exceed 5% of the Contract Price. The limit of 5% under this Part B and the limit of delay damages which may be applied under Sub-Clause 26.3 [liquidated damages], and also liquidated damages for failure to attain functional guarantees as per Sub-Clause 28.3 (also as mentioned under Appendix 8), combined shall not exceed 10%. Should the financial deductions reach the 5% threshold and the Contractor continues in failing to meet the requirements outlined in this Part B, such continued non-compliance shall be treated as per Sub-Clause 42.2 of the Conditions of Contract.

3. Construction Methodology

The assessment of these KPI will be conducted on a monthly basis, unless otherwise stated, and any resulting implications shall be reflected into the interim payments.

Key Performance Indicator	Measurement/ Deviation	Implication
i. Bidder's Construction Methodology, including: a. General Construction Strategy and Methodology b. Construction Schedule - Mobilization Plan c. Stakeholder Management d. Construction Schedule (alternatives) e. Record Keeping Measures in comparison to what was proposed/agreed in the Contract or in the bid. (Whichever sets higher standard)	Outstanding Performance	None
	Satisfactory Performance	None
	Partially meeting expectations	Noncompliance x 1.25 % of Accepted Contract Amount / month
	Unsatisfactory	Noncompliance x 2.5 % of Accepted Contract Amount / month

4. Materials, Equipment, and Logistics

The assessment of these KPI will be conducted on a monthly basis, unless otherwise stated, and any resulting implications shall be reflected into the interim payments.

Key Performance Indicator	Measurement/ Deviation	Implication
ii. Bidder's Materials, Equipment, and Logistics, including: a. Supply Chain b. Equipment Compliance c. Specialized Equipment d. Minimisation of Waste Measures in comparison to what was proposed/agreed in the Contract or in the bid. (Whichever sets higher standard)	Outstanding Performance	None
	Satisfactory Performance	None
	Partially meeting expectations	Noncompliance x 0.875 % of Accepted Contract Amount / month
	Unsatisfactory	Noncompliance x 1.75 % of Accepted Contract Amount / month

5. Local Participation

The evaluation of this Local Participation KPI will be conducted only once upon the conclusion of the Contract, with any resulting implications reflected into the Statement at Completion. A monthly or interim measurement shall not be made.

Key Performance Indicator	Measurement/ Deviation	Implication
iii. Percentage of local labor—Measures how much local labor is utilized in comparison to what was identified in the Contract or in the bid. (Whichever sets higher standard)	Outstanding Performance	None
	Satisfactory Performance	None
	Partially meeting expectations	Noncompliance x A% ¹ of Accepted Contract Amount / month
	Unsatisfactory	Noncompliance x A% ¹ of Accepted Contract Amount / month

¹ A % = [1 - (Bidder's provided person-days of local labor / Bidder's proposed person-days of local labor)] X 5%

6. EHS Requirements

The assessment of these KPI will be conducted on a monthly basis and any resulting implications reflected into the interim payments.

Key Performance Indicator	Measurement/ Deviation	Implication
iv. Noncompliance with Environmental, Health, and Safety management measures as identified in the Contract or in the bid (whichever sets higher standard)	Outstanding Performance	None
	Satisfactory Performance	None
	Partially meeting expectations	Noncompliance x 0.375 % of Accepted Contract Amount / month
	Unsatisfactory	Noncompliance x 0.75 % of Accepted Contract Amount / month

Part C – Bonuses (Not Applicable)

The Contractor shall be entitled to a bonus payment if the following is (are) completed earlier than the stipulated time or better than the requirement (as the case may be). The amount of bonus is stated below.

Aspect of Performance	Amount the Contractor is paid if the target stated is achieved
Example: Submission of Clause 18.1 Programme early and	

obtain Project Manager's No objection with maximum 2 iterations and the number of days between submission of the programme and acceptance of the programme by the Project Manager ...days.	
... Quality	
...EHS	

Section 9 - Contract Forms

This Section contains the Letter of Acceptance, the Contract Agreement, and Appendixes to the Contract Agreement, which, once completed, will form part of the Contract. When required, the Performance Security and Advance Payment Security, substantially in the forms provided, shall be submitted by the successful Bidder after contract award.

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Notice of Intention for Award of Contract (NOT APPLICABLE)

---- on letterhead paper of the employer ----

..... Date of notification

To: name of the bidder

Attention: insert name of the bidder's authorized representative

Address: insert address of the bidder's authorized representative

Telephone/Fax numbers: insert telephone/fax numbers of the bidder's authorized representative

E-mail Address: insert e-mail address of the bidder's authorized representative

This is to notify you of our intention to award the contract [. insert name of the contract and identification number, as given in the Bid Data Sheet]. You have [. . . insert number of days as specified in ITB 42.1 of the BDS . . .] days, from the date of this notification to (i) request for a debriefing in relation to the evaluation of your Bid, and/or (ii) submit a bidding-related complaint in relation to the intention for award of contract, in accordance with the procedures specified in ITB 47.1.

The summary of the evaluation are as follows:

1. List of Bidders

Name of Bidder	Bid Price as read out at opening	Evaluated Bid Price

2. Reason/s why your Bid was unsuccessful

.....

3. The successful Bidder

Name of Bidder:	
Address:	
Contract Price:	
Duration of Contract:	
Scope of the Contract Awarded:	
Amount Performance Security Required:	

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Invitation to Finalization of the Draft Contract Before Notification of Award

[on letterhead paper of the Employer]

Letter of Acceptance

[date]

To: *[Name and address of the Bidder]*

Subject: *[please specify]*

Contract No: *[please specify]*

This is to notify you that your Bid dated [date] for execution of the *[name of the contract and identification number, as given in the Bid Data Sheet]* is hereby found as the Most Advantageous Bid by our Agency,

You are hereby invited to discussions to finalize the draft contract, through *[...enter means of discussions such as in-person meetings, venue, or electronic correspondence...]*. The discussions on the finalization of the draft contract will include the topics given in the Attachment to this invitation.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Topics to be discussed during finalization of the draft contract.

Letter of Acceptance

[on letterhead of Employer]

[date]

To: [Name and address of the Contractor]

Subject: [please specify]

Contract No: [please specify]

This is to notify you that your Bid dated [date] for execution of the [name of the contract and identification number, as given in the Bid Data Sheet] for the Contract Price in the aggregate of [amounts in words and figures] [name of currency], as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by our Agency.

You are requested to furnish the Performance Security within 28 days in accordance with the Conditions of Contract and any additional security required as a result of the evaluation of your bid, using for that purpose one of the Performance Security Forms included in Section 9 (Contract Forms) of the Bidding Document.

Authorized Signature:

Name and Title of Signatory:

Name of Agency:

Attachment: Contract Agreement

Beneficial Ownership Disclosure Form

NOTE

NOTE TO BIDDERS

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful Bidder. In case of joint venture, the Bidder must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Bidder is any natural person who ultimately owns or controls the Bidder by meeting one or more of the following conditions:

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder.

Contract No.: *[please specify]*

To: *[insert complete name of Employer]*

In response to your request in the Letter of Acceptance *dated [insert date of letter of Acceptance]* to furnish additional information on beneficial ownership: *[select one option as applicable and delete the options that are not applicable]*

(i) we hereby provide the following beneficial ownership information.

Details of beneficial ownership

Identity of Beneficial Owner	Directly or indirectly holding 25% or more of the shares (Yes / No)	Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No)	Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Bidder (Yes / No)
<i>[include full name (last, middle, first), nationality, country of residence]</i>			

OR

(ii) We declare that there is no Beneficial Owner meeting one or more of the following conditions:

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder

OR

(iii) *We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Bidder shall provide explanation on why it is unable to identify any Beneficial Owner]*

- directly or indirectly holding 25% or more of the shares
- directly or indirectly holding 25% or more of the voting rights
- directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Bidder]

Name of the Bidder: *[insert complete name of the Bidder]

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

**[insert complete name of person duly authorized to sign the Bid]

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

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

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

* In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder. In the event that the Bidder is a joint venture, each reference to “Bidder” in the Beneficial Ownership Disclosure Form (including this Introduction thereto) shall be read to refer to the joint venture member.

** Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

Contract Agreement

THIS AGREEMENT made on the [*insert number*] day of [*insert month*], [*insert year*],

BETWEEN

(1) [*name of the employer*], a corporation incorporated under the laws of [*country of the employer*] and having its principal place of business at [*address of the employer*] (hereinafter called “the Employer”), and (2) [*name of the contractor*], a corporation incorporated under the laws of [*country of the contractor*] and having its principal place of business at [*address of the contractor*] (hereinafter called “the Contractor”).

WHEREAS the Employer desires to engage the Contractor to design, manufacture, test, deliver, install, complete and commission certain Facilities, viz. [*list of facilities*] (“the Facilities”) and the Contractor have agreed to such engagement upon and subject to the terms and conditions hereinafter appearing.

NOW IT IS HEREBY AGREED as follows:

Article 1 Contract Documents

1.1 Contract Documents (Reference GCC Clause 2)

The following documents shall constitute the Contract between the Employer and the Contractor, and each shall be read and construed as an integral part of the Contract:

- (a) This Contract Agreement and the Appendixes hereto
- (b) Letter of Technical Bid
- (c) Letter of Price Bid and Price Schedules submitted by the Contractor
- (d) Special Conditions of Contract including attachments
- (e) List of Eligible Countries that was specified in Section 5 of the Bidding Document
- (f) General Conditions of Contract
- (g) Specifications (Employer’s Requirements & Technical Provisions)
- (h) Drawings
- (i) Environmental, Health, and Safety (EHS) Code of Conduct for Contractor’s Personnel
- (k) Other completed Bidding Forms submitted with the Letter of Bid
- (l) Any other documents forming part of the Employer’s Requirements
- (m) Any other documents forming part of the contract¹

1.2 Order of Precedence (Reference GCC Clause 2)

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 Definitions (Reference GCC Clause 1)

Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the General Conditions.

¹ Tables of Adjustment Data may be added if the contract provides for price adjustment (see GCC 11).

Article 2 Contract Price and Terms of Payment

2.1 Contract Price (Reference GCC Clause 11)

The Employer hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall be the aggregate of [. . . *amounts of foreign currency in words* . . .], [. . . *amounts in figures*. . .] as specified in Price Schedule No. 5 (Grand Summary), [. . . *amounts of local currency in words* . . .], [. . . *amounts in figures*. . .], or such other sums as may be determined in accordance with the terms and conditions of the Contract.

2.2 Terms of Payment (Reference GCC Clause 12)

The terms and procedures of payment according to which the Employer will reimburse the Contractor are given in the Appendix (Terms and Procedures of Payment) hereto.

The Employer shall instruct its bank to issue an irrevocable confirmed documentary credit made available to the Contractor in a bank in the country of the Contractor. The credit shall be for an amount of [. . . *amount equal to the total named in Schedule 1 less the advance payment to be made for plant and mandatory spare parts supplied from abroad*. . .]; and shall be subject to the Uniform Customs and Practice for Documentary Credits 1993 Revision, ICC Publication No. 500.²

In the event that the amount payable under Schedule No. 1 is adjusted in accordance with GCC 11.2 or with any of the other terms of the Contract, the Employer shall arrange for the documentary credit to be amended accordingly.

Article 3 Effective Date

3.1 Effective Date (Reference GCC Clause 1)

The Effective Date upon which the period until the Time for Completion of the Facilities shall be counted from is the date when all of the following conditions have been fulfilled:

- (a) This Contract Agreement has been duly executed for and on behalf of the Employer and the Contractor.
- (b) The Contractor has submitted to the Employer the performance security and the advance payment guarantee.
- (c) The Employer has paid the Contractor the advance payment.
- (d) The Contractor has been advised that the documentary credit referred to in Article 2.2 above has been issued in its favor.

Each party shall use its best efforts to fulfill the above conditions for which it is responsible as soon as practicable.

3.2 If the conditions listed under 3.1 are not fulfilled within 2 months from the date of this Contract notification because of reasons not attributable to the Contractor, the parties shall discuss and agree on an equitable adjustment to the Contract Price and the Time for Completion and/or other relevant conditions of the Contract.

² Or Uniform Customs and Practice for Documentary Credits 2007 Revision, ICC Publication No. 600 (or the latest version).

**Article 4
Communications**

- 4.1 The address of the Employer for notice purposes, pursuant to GCC 4.1 is: [*Employer's address*].
- 4.2 The address of the Contractor for notice purposes, pursuant to GCC 4.1 is: [*Contractor's address*].

**Article 5.
Appendixes**

- 5.1 The Appendixes listed in the attached List of Appendixes shall be deemed to form an integral part of this Contract Agreement.
- 5.2 Reference in the Contract to any Appendix shall mean the Appendixes 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 the day and year first above written.

Signed by, for and on behalf of the Employer

[*Signature*]

[*Title*]

in the presence of

[*Signature*]

[*Title*]

Signed by, for and on behalf of the Contractor

[*Signature*]

[*Title*]

in the presence of

[*Signature*]

[*Title*]

APPENDIXES

- 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 9 - Environmental Impact Assessment (EIA), including EMP
- Appendix 10 - Resettlement Planning (RP)

Appendix 1 - Terms and Procedures of Payment

In accordance with the provisions of GCC Clause 12 (Terms of Payment), the Employer shall pay the Contractor in the following manner and at the following times, based on the Price Breakdown given in the section on Price Schedules. Payments will be made in the currencies quoted by the Bidder 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 Mandatory Spare Parts Supplied from Abroad

In respect of plant and mandatory spare parts supplied from abroad, the following payments shall be made:

Ten percent (10%) of the total CIP amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. The advance payment security may be reduced in proportion to the value of the plant and mandatory spare parts delivered to the site, as evidenced by delivery documents.

Seventy Nine percent (79%) of the total or pro rata CIP amount, upon shipment of material within 45 days after receipt of invoice.

One percent (1%) of the total or pro rata CIP or amount upon Incoterm "CIP," upon delivery to the site within 45 days after receipt of invoice.

Five percent (5%) of the total or pro rata CIP amount upon issue of the Completion Certificate, within 45 days after receipt of invoice.

Five percent (5%) of the total or pro rata CIP amount upon issue of the Operational Acceptance Certificate, within 45 days after receipt of invoice.

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

In respect of plant and mandatory spare parts supplied from within the Employer's country, the following payments shall be made:

Ten percent (10%) of the total EXW plus Transportation amount as an advance payment against receipt of invoice, and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. The advance payment security may be reduced in proportion to the value of the plant and mandatory spare parts delivered to the site, as evidenced by delivery documents.

Eighty percent (80%) of the total or pro rata EXW plus Transportation amount upon Incoterm "Ex-Works," upon delivery to the site within 45 days after receipt of invoice.

Five percent (5%) of the total or pro rata EXW plus Transportation amount upon issue of the Completion Certificate, within 45 days after receipt of invoice.

Five percent (5%) of the total or pro rata EXW plus Transportation amount upon issue of the Operational Acceptance Certificate, within 45 days after receipt of invoice.

Schedule No. 3 - Design Services

In respect of design services for both the foreign currency and the local currency portions, the following payments shall be made:

Ten percent (10%) of the total design services amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer.

Ninety percent (90%) of the total or pro rata design services amount upon acceptance of design by the Project Manager within 45 days after receipt of invoice.

Schedule No. 4 - Installation and Other Services

In respect of installation services for the local currency portion, the following payments shall be made:

Ten percent (10%) of the total installation and other services amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. The advance payment security may be reduced in proportion to the value of work performed by the Contractor as evidenced by the invoices for installation services.

Eighty percent (80%) of the measured value of work performed by the Contractor, as identified in the said Program of Performance, during the preceding month, as evidenced by the Employer's authorization of the Contractor's application, will be made monthly within 45 days after receipt of invoice.

Five percent (5%) of the total or pro rata value of installation services performed by the Contractor as evidenced by the Employer's authorization of the Contractor's monthly applications, upon issue of the Completion Certificate, within 45 days after receipt of invoice.

Five percent (5%) of the total or pro rata value of installation services performed by the Contractor as evidenced by the Employer's authorization of the Contractor's monthly applications, upon issue of the Operational Acceptance Certificate, within 45 days after receipt of invoice.

In the event that the Employer fails to make any payment on its respective due date, the Employer shall pay to the Contractor interest on the amount of such delayed payment at the rate of eight percent (8%) per annum for period of delay until payment has been made in full.

(B) Payment Procedures

When applying for certification and making payments, the procedures shall be as follows:

Procedure

Sr. No.	Item	Procedure
1.	Plant, Equipment & Spare Parts	Commitment Procedure (Through irrevocable Letter of credit supported by the ADB Commitment Letter).
2.	Design	Commitment Procedure or Direct Payment
3.	Civil Works	Direct Payment Procedure (Direct payment by the ADB acting on duly authorized request of the Borrower).
4.	Installation, Erection, Testing & Commissioning	Commitment Procedure or Direct Payment
5.	Custom Duties & Taxes at Port	Shall be initially paid by the contractor and the same shall be reimbursed as per actual by the Employer using its own funds within 30 days from submission of invoice(s) (refer GCC 14.10)
6	Taxes (GST & PST if applicable)	General Sales Tax and Provincial Sales Tax if levied & applicable on finished local goods and services respectively shall be re-imbursed as per actual upon production of invoice & proof of payment of sales tax. (refer GCC 14.10)
7.	Crop compensation, ROW, damage to Houses, Health & safety measures, hiring services of Frontier Constabulary (FC) for security and Revenue Staff to work with the Employer for resolution of matters pertaining ROW and land/crop compensation etc.	Shall be initially paid by the contractor and the same shall be reimbursed as per actual by the Employer using its own funds within 30 days from submission of invoice(s)

Note:

- 1) In case Contractor opts for payment under commitment procedures, he will submit the option within one seven (07) after signing of the agreement. In case of failure payment under direct disbursement procedure shall deemed to be applicable.
- 2) An irrevocable Letter of Credit (L/C) shall be opened expeditiously by the Employer provided that the Contractor submits within seven (07) days after signing of Contract Agreement, requisite information to the Employer for establishing the L/C e.g. name of Advising Bank, name, address and Bank Account Number of Beneficiary etc. Unless provided otherwise under State Laws, the L/C opened shall be irrevocable, divisible and transferable for payment to the Contractor or beneficiary assigned by him. Any delay in opening of L/C due to reasons on part of the Contractor shall be to the Contractor's account.
- 3) L/C shall be established by the Employer, however charges for opening of Letter of Credit and subsequent amendments, if any, shall be borne by the Contractor.

Certificates and Payment

1. Method of Application for Certificate of Payment

- (a) The Contractor shall submit to the Employer ten (10) copies of Application for Certificate of Payment each signed by the Contractor and in such form as the Employer may from time to time prescribe. Such invoices, receipts, or other documentary evidence shall accompany as the employer may from time to time require

- (b) The application for certificate of payment for progress of Work under Schedule 4 shall be submitted after end of each month accompanying also a statement signed by the Contractor in the form stated in para (4) below and in such other form as the Project Manager may from time to time prescribe showing the amounts to which the Contractor may consider himself to be entitled up to the end of the month in respect of:

1. The permanent work executed.
2. Payment on account of lump sum item in the Price Schedule not included under head (1) above.

Provided further that no amount shall be certified by the Project Manager until and unless all insurance policies under Clauses 29, 30, 32, 33, 34, 35, 37 and 38 of GCC have been furnished to the satisfaction of the Project Manager; and Program of Performance submitted in accordance with Sub-Clause 18.2 of GCC (if not provided earlier), has been approved by the Project Manager.

- (c) The Applications for Certificate of Payment for supply of Goods (Schedule 1 and 2) shall be submitted on the delivery of any Goods and shall be also accompanied by the following documents:

1. Shipping Documents comprising of:
 - i) Payment / Commercial Invoice
 - ii) Clean on board Bill of Lading or airway bill issued by the freight forwarder (for imported Goods only)
 - iii) Packing list
 - iv) Certificate or Policy of Freight Insurance from Ex-factory to the Project Site or to the Employer's designated Warehouse in case of Spare Parts, of the portion of the Goods for which Certificate of Payment is requested
2. Certificate that the Goods complies with the Specification
3. Certificate of origin, issued by the Contractor
4. Warranty Certificate
5. Pre-shipment inspection Certificate or letter of waiver in accordance with GCC Sub-Clause 23.3 and 23.4.
6. Notice to Deliver issued in accordance with GCC Sub-Clause 23.12.
7. Any other document as considered by the Employer/Project Manager
8. The Application for Certificate of Payment shall state the amount claimed and shall set forth in detail, in the order of the Price Schedule, particulars of the Work executed up to the date named in the Application and subsequent to the period covered by the last preceding certificate, if any.

Note: The payment application for delivery at site of schedule-1 goods will consist of (i) Payment/Commercial Invoice, (ii) Delivery Note / Acknowledgement by the Employer or its representative, of the material receipt at site or at the Employer's designated Warehouse in case of Spare Parts and any other documents as considered by the Employer/Project Manager.

2. Issue of Certificate of Payment for Schedules 1, 2, 3, 4 and 5.

The Project Manager within fourteen (14) days after receiving an Application for Certificate of Payment from the Contractor, shall either approve or amend it as he consider reasonable and proper in respect thereof subject to the deductions of any sums which may have become due and payable by the Contractor to the Employer and issue a Certificate of Payment accordingly to the Employer showing the amount due to the Contractor, with a copy to the Contractor, or, advise the Contractor in writing as to the reasons for which it is being withheld.

3. Reduction in Payment

If any Work is not being carried out in accordance with the Contract to the satisfaction of the Employer/Project Manager, the Project Manager shall have authority to omit or reduce the value of such Work in any Certificate of Payment.

4. Withhold Any Payments

If the Work or any parts thereof are not being carried out in accordance with the Contract to the satisfaction of the Employer/Project Manager, the Employer/Project Manager shall have power to withhold any Payments and in order to protect the Employer from loss on account of:

- (a) defective Work not rectified
- (b) claims filed against the Contractor as per the provisions of the contract
- (c) damage to any other Contractor or Contractors employed by the Employer
- (d) Contractor's non-compliance with the Contract
- (e) any Government dues recoverable from the Contractor if notified by the Government
- (f) Any other reason as deemed necessary by the Employer, for substantiation of the invoice.

The Employer/Project Manager shall notify the Contractor regarding this withholding giving reasons/grounds.

5. Certification of Payable Amount

1. A Certificate of Payment shall not be withheld on account of any part of the payment applied for being disputed. In such case, a Certificate of Payment for the undisputed amount shall be issued.
2. The Employer shall make the final payment of 5 % of the Contract Price including any price variations arising following modification to the scope (GCC Sub-Clause 39) within 45 days of submission of invoice along with the Operational Acceptance Certificate (GCC Sub-Clause 25)

6. Corrections to Certificate of Payment

The Employer may by any Certificate of Payment make any correction or modifications in any previous Certificate of Payment which shall have been issued by him.

7. Release of Payments Withheld

When the reasons / grounds for withholding the payment are removed by the Contractor, the Employer shall after examination, and upon being satisfied to that effect that there are no reasons to "withhold" any of Payments, shall release all such payments due to the contractor without mark-up and penalty.

8. Time for Approval of Certificate of Payment

The amount due to the Contractor under any Certificate of Payment shall be approved by the Employer for payment within the time stated.

9. Payment by Measurement

- (1) The Contractor shall make Application for the Final Certificate of Payment with supporting documentation to the Employer within 28 days after the issue of the Operational Acceptance Certificate, or if more than one, the last Operational Acceptance Certificate.
- (2) The Application for the Final Certificate of Payment shall be accompanied by a Draft Final Statement prepared by the Contractor. The Draft Final Statement shall give full details of the value of all Goods supplied and Work done under the Contract together with:
 - (a) such additions to or deductions from the Contract Price as have been agreed, and
 - (b) all claims for additional payment to which the Contractor may consider himself entitled under the Contract up to the date of the last Operational Acceptance Certificate.
- (3) If the Project Manager disagrees with or cannot verify any part of the Draft Final Statement, the Contractor shall submit such further information as the Project Manager may reasonably require and shall make such changes in all claims for additional payment to which the

Contractor may consider himself entitled under the Contract up to the last Operational Acceptance Certificate.

10. Issue of Final Certificate of Payment

- (1) The Project Manager shall issue to NGC (formerly NTDC) with a copy to the Contractor, the Final Certificate of Payment with 30 days after receiving an Application with Final Statement in accordance with Sub-Clause 10 hereof.
- (2) If the Contractor has not applied for a Final Certificate of Payment within the time specified in Sub- Clause 10 hereof, the Project Manager shall request the Contractor to do so within a further period of 21 days. If the Contractor fails to make such an Application, the Employer shall issue the Final Payment Certificate for such amount as he deems correct.

11. Final Certificate of Payment Conclusive

- (1) A Final Certificate of Payment shall be conclusive evidence of the value of the Work, that the Work is in accordance with the Contract and that the Contractor has performed all his obligations under the Contract.
- (2) Payment of the amount certified in the Final Certificate of Payment shall be conclusive evidence that NGC (formerly NTDC) has performed all its obligations under the Contract.
- (3) A Final Certificate of Payment shall not be conclusive if any Arbitration or court proceedings under the Contract have been commenced by either party before the expiry of 84 days after the issue of the Final Certificate of Payment.

12. Payments Due from Contractor for non - compliance

NGC (formerly NTDC) may, without prejudice to any other method of recovery, deduct the amount due from any money in his hand due to or which may become due to the Contractor or recover same through the Performance Security as per the provisions of the contract. Such deduction shall not relieve the Contractor from his obligations to complete the Work in accordance with the Contract to the satisfaction of the Employer.

- (a) The charges for establishment of L/C and any subsequent charges for modification and extension shall be borne by the Contractor. An irrevocable L/C shall be opened by the Employer within **sixty (60) days** from the date of submission of requisite information to the Employer for establishing the L/C e.g. name of Advising Bank, name, address and Bank Account Number of Beneficiary etc within a week's time after signing of the Contract Agreement. Unless provided otherwise under State Laws, the L/C opened shall be irrevocable, divisible and transferable for payment to the Contractor or beneficiary assigned by him. Any delay in opening of L/C due to reasons on part of the Contractor shall be to the Contractor's account."

For any sum paid by the Contractor in respect of custom duties and taxes in consequence of importation of Plant specified in Price Schedule No. 1 incorporated into the Facilities, compensation for unavoidable Crop damage, tree cutting, relocation/damage of houses, during any month, shall be reimbursed by the Employer within **forty-five (45) days** against presentation of acceptable claim supported by documentary evidence in original to the Employer. The expenses against this item shall be reimbursed from the amount of Provisional Sums provided in Price Schedule No. 5 Grand Summary for this purpose."

Appendix 2 - Price Adjustment

Price Adjustment Formula for Schedule No. 1 – Plant (including Mandatory Spare Parts) Supplied from abroad and Schedule No. 2 Plant (including Mandatory Spare Parts) Supplied from within Employer's Country

Prices payable to the Contractor, in accordance with the Contract, shall be subject to adjustment during performance of the Contract to reflect changes in the cost of material components, in accordance with the following formula:

The Contract Price shall be adjusted for the local/foreign currency prices of only the following material components stated in Schedule No.1 - Plant (including Mandatory Spare Parts Supplied from Abroad) and Schedule No. 2 - Plant (including Mandatory Spare Parts Supplied from within the Employer's Country) of the Price Schedules for any increase or decrease in the costs:

- a) Rate of Steel for Steel Lattice Towers including Stubs, Steel Core of ACSR conductor and steel part of Alumoweld OPGW
- b) Rate of Aluminum of ACSR conductor and Aluminum part of OPGW

No increase in the price of each of the above mentioned components will be allowed beyond the scheduled delivery/shipment period of respective Plant if the price increase is because of reasons attributable to the Contractor. The escalation for each component shall be according to the scheduled completion of that item provided however that the extension is granted pursuant to GCC Clause 40. For the avoidance of doubt, the price adjustment regarding supply of Plant received later than the scheduled period, shall continue to be paid at the revised rate of the constituent prevailing on the date of its scheduled delivery. The Employer will, however, be entitled to any price decrease occurring during such period of delays. Each claim shall be supported by documentary evidences to the satisfaction of the Project Manager and the Employer.

The increase or decrease in the amount payable by Employer to the Contractor shall be calculated on the basis of the following formula:

$$P_1 = P_o \times \left\{ a + b \left(\frac{S_1}{S_o} \right) + c \left(\frac{A_1}{A_o} \right) \right\}$$

Where

P_o = Contract Base Price

P₁ = Revised adjusted Contract Price

a = Fixed portion 30%

b = Steel component

- 70% for towers
- 05% for ACSR conductor
- 55% for OPGW

c = Aluminum component

- 65% for ACSR conductor
- 15% for OPGW

S_o = Base rate of steel Rebar (US \$ per Metric Ton) prevailing twenty eight (28) days prior to the date of Bid Opening based on London Metal Exchange (LME) cash (official) rate applicable for all grades of steel or Pakistan Steel Mills (PSM) Billet rate (whichever is applicable).

S1 = Revised rate of Steel Rebar (US \$ per Metric Ton) prevailing sixty (60) days prior to the date of shipment/delivery by the manufacturer, based on LME cash (official) rate applicable for all grades of Steel or Pakistan Steel Mill (PSM) Billet rate (whichever is applicable).

Ao = Base rate of Aluminum (US \$ per Metric Ton) prevailing twenty eight (28) days prior to the date of Bid Opening based on LME cash (official) rate.

A1 = Revised rate of Aluminum (US \$ per Metric Ton) prevailing sixty (60) days prior to the date of shipment/delivery by the manufacturer.

Conditions Applicable to Price Adjustment

The base date shall be the date 28 days prior to the deadline for submission of the Bid.

The following conditions shall apply:

- (a) If the currency in which the Contract Price is expressed is different from the currency of the country of origin of the materials rates, a correction factor will be applied to avoid incorrect adjustments of the Contract Price. The correction factor shall correspond to the ratio of exchange rates (composite TT&OD) published/authorized by National Bank of Pakistan between the two currencies on the date for adjustment and base date as defined above and per below formula:

$$\text{Correction Factor} = Z_1 / Z_0,$$

Where,

Z_1 = No. of units of Currency of Contract Price which is equivalent to One (01) US Dollar (currency of material indices) on the Date of Adjustment,

Z_0 = No. of units of Currency of Contract Price which is equivalent to One (01) US Dollar (currency of material indices) on the Base Date.

- (b) No price adjustment shall be payable on the portion of the Contract price paid to the Contractor as an advance payment.
- (c) Price adjustment shall be applied only if the resulting increase or decrease is more than two percent (2%) of the amount of respective payment invoice calculated at the rates entered in the Price Schedules.

Price Adjustment Formula for Price Schedule No. 4 – Installation & other Services [Items D, E, F, H and Installation Services for Additional Work]

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

The Contract Price shall be adjusted for the local currency prices of the works stated in Schedule 4 - Installation & Services [Items D, E, F, H and Installation Services for Additional Work] of the Price Schedules for any increase or decrease in the costs of the following:

- a) Rate of wages of skilled or unskilled labor.
- b) Petrol and Diesel Fuel
- c) Cement
- d) Reinforcing Steel Bar

No increase in the price of each of the above mentioned components will be allowed beyond the scheduled completion period of Foundation, Installation (Erection & Stringing) works including installation services for additional works if the price increase is because of reasons attributable to the Contractor. The escalation for each component shall be according to the scheduled completion of that item provided however that the extension is granted pursuant to GCC Clause 40. For the avoidance of doubt, the price adjustment regarding work carried out later than the scheduled period, shall continue to be paid at the revised rate of the constituent prevailing on the date of its scheduled completion. The

Employer will however, be entitled to any price decrease occurring during such period of delays. For each claim the Contractor shall submit invoice from each source of supply.

The increase or decrease in the amount payable by Employer to the Contractor shall be calculated on the basis of the following formula:

For Foundation Works:

$$A1 = A/100 \left(30 + 20 \frac{UL1}{UL} + 14 \frac{L1}{L} + 5 \frac{P1}{P} + 11 \frac{D1}{D} + 15 \frac{S1}{S} + 5 \frac{C1}{C} \right)$$

For Installation Works (Erection & Stringing):

$$A1 = A/100 \left(30 + 26 \frac{UL1}{UL} + 14 \frac{L1}{L} + 10 \frac{P1}{P} + 20 \frac{D1}{D} \right)$$

Where

- A1 = Revised amount for payment.
- A = is the amount payable to the Contractor at the rates entered in Price Schedules, for the work executed after the date of change in the rates or prices of labour or materials mentioned in this section.
- UL = is the basic minimum daily wage rate for unskilled labor (in PKR) as stated in Table 7.11 (Intercity Consumer Prices) for Sargodha City of Monthly Bulletin of Statistics, Statistics Division, Pakistan Bureau of Statistics (PBS), prevailing twenty eight (28) days prior to the date of Bid opening.
- UL1 = is the revised minimum daily wage rate for unskilled labour (in PKR) as stated in Table 7.11 (Intercity Consumer Prices) for Sargodha City of Monthly Bulletin of Statistics, Statistics Division, Pakistan Bureau of Statistics (PBS), prevailing twenty eight (28) days prior to the start of the execution month.
- L = is the basic minimum daily wage rate for skilled labour (mason) (in PKR) as stated in Table 7.11 (Intercity Consumer Prices) for Sargodha City of Monthly Bulletin of Statistics, Statistics Division, Pakistan Bureau of Statistics (PBS), prevailing twenty eight (28) days prior to the date of Bid opening.
- L1 = is the revised minimum daily wage rate for skilled labour (mason) (in PKR) as stated in Table 7.11 (Intercity Consumer Prices) for Sargodha City of Monthly Bulletin of Statistics, Statistics Division, Pakistan Bureau of Statistics (PBS), prevailing twenty eight (28) days prior to start of the execution month.
- P = is the basic rate of Altron Premium (PKR per liter) as notified by Pakistan State Oil (PSO), prevailing twenty eight (28) days prior to the date of Bid opening.
- P1 = is the revised rate of Altron Premium (PKR per liter) as notified by Pakistan State Oil (PSO), prevailing twenty eight (28) days prior to start of the execution month.
- D = is the basic rate of Action + Diesel (PKR per liter) as notified by Pakistan State Oil (PSO), prevailing twenty eight (28) days prior to the date of Bid opening.
- D1 = is the revised rate of Action + Diesel (PKR per liter) as notified by Pakistan State Oil (PSO) Limited, prevailing twenty eight (28) days prior to start of the execution month.

- S = is the basic rate of Iron Bar (M.S. Bar) ½ inch (PKR per TON), as stated in Table 7.11 (Intercity Consumer Prices) for Sargodha City of Monthly Bulletin of Statistics, Statistics Division, Pakistan Bureau of Statistics (PBS), prevailing twenty eight (28) days prior to the date of Bid opening.
- S1 = is the revised rate of Iron Bar (M.S Bar) ½ inch (PKR per TON), as stated in Table 7.11 (Intercity Consumer Prices) for Sargodha City of Monthly Bulletin of Statistics, Statistics Division, Pakistan Bureau of Statistics (PBS), prevailing twenty eight (28) days prior to start of the execution month.
- C = is the basic rate of Cement (Local) (PKR per bag), as stated in Table 7.11 (Intercity Consumer Prices) for Sargodha City of Monthly Bulletin of Statistics, Statistics Division, Pakistan Bureau of Statistics (PBS), prevailing twenty eight (28) days prior to the date of Bid opening.
- C1 = is the revised rate of Cement (Local) (PKR per bag), as stated in Table 7.11 (Intercity Consumer Prices) for Sargodha City of Monthly Bulletin of Statistics, Statistics Division, Pakistan Bureau of Statistics (PBS), prevailing twenty eight (28) days prior to start of the execution month.
- 30 = is the fixed percentage coefficient

In determining the amount of any increase or decrease to the Contract Price pursuant to this section, no account shall be taken of any fluctuation as a result of Government orders or otherwise in the cost of benefits i.e. bonus, gratuity, education, group insurance, paid holidays, casual leaves, workmen compensation etc. Any increase or decrease in the price of materials which have not been used on the project during that month shall not be considered in the adjustment of the Contract Price, and the ratio will be taken as one (1). If at any time the current indices are not available, provisional indices as determined by the Project Manager will be used subject to subsequent correction of the amounts paid to the Contractor when the current indices become available.

The value of any revised rates or prices shall be supported by documentary evidences to the satisfaction of the Project Manager and the Employer.

No price adjustment shall be payable on the portion of the Contract Price paid to the Contractor as an Advance Payment.

Price Escalation / Adjustment shall be applied only if the resulting increase or decrease is more than two percent (2%) of the amount of respective payment invoice calculated at the rates entered in the schedule of prices.

Appendix 3 - Insurance Requirements

(A) Types of Insurance to Be Taken Out by the Contractor

In accordance with the provisions of GCC Clause 34, 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 types of insurance 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.

(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 thereof) 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]

(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]

(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]

(d) Automobile Liability Insurance

Covering use of all vehicles used by the Contractor or its Subcontractors (whether owned by them or not) 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 Insurance

The Contractor is also required to take out and maintain at its own cost the following types of insurance:

Details:

Amount [in currency (ies)]	Deductible limits [in currency (ies)]	Parties insured [names]	From [place]	To [place]

The Employer shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Sub clause 34.1, except for the Third Party Liability, Workers' Compensation, and Employer's Liability Insurance, 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 34.1, except for the Cargo, Workers' Compensation and Employer's Liability Insurance. All insurers' 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.

(B) Types of Insurance to Be Taken Out by the Employer ... (NOT USED)

The Employer shall at its expense take out and maintain in effect during the performance of the Contract the following insurance policies.

Details:

Amount [in currency (ies)]	Deductible limits [in currency (ies)]	Parties insured [names]	From [place]	To [place]

Additional Conditions (Insurance)**(h) Insurance of the Facilities**

The risks to be insured are:

- (i) Fire, smokes, explosion, falling objects, earthquake, perils of the sea, tempest, impact by aircraft or land vehicle, aircraft and other aerial devices or articles dropped therefrom, lightning, strike, riot, civil commotion, escape of water, inundation, rain, snow, landslides, flood, act of God, vandalism or malicious damage, windstorm or hail storm and;
- (ii) Collision, upset, overturn, derailment, stranding or sinking of an automobile or any conveyance of a common carrier by land, water or air in which the Plant or any part thereof is being carried including overland transportation in Pakistan from port of entry to the Site, and
- (iii) Theft, burglary or attempted theft or burglary, and
- (iv) Any loss or damage during pre-erection storage, and

- (v) Faults in construction and erection, lack of skill, lack of experience, negligence, malicious act, and
- (vi) any other sudden and unforeseen event such as loss or damage due to collapse etc. on site, transport of items to be erected, and
- (vii) Actions of the Employer in the operation of Plant and Equipment or part thereof on behalf of the Contractor.

(i) Cargo Insurance of Plant and Equipment

- (1) The Contractor shall in the joint names of the Contractor and Employer, obtain Cargo All Risks Insurance to cover loss or damage to the Plant or part thereof during transport.
- (2) The insurance for each consignment of Plant or part thereof shall start from the time the Plant or part thereof leave the warehouse or place of storage and terminate after **ninety (90) days** on its completion of unloading at the Site or until insurance survey whichever occurs first. Upon arrival of each consignment at the Site, the Contractor shall, immediately arrange insurance survey by the insurance company.
- (3) The sum insured for imported Plant or part thereof shall be for its full replacement value at the Site i.e. 100 % CIP value at the Site for each consignment of the Plant or part thereof plus not less than 30 % of CIP value at the Site to cover any additional costs resulting from loss or damage thereof.
- (4) The Insurance Policy for imported Plant etc. shall be on "All Risks" basis and shall not be limited to the attachment/endorsement of following clauses:
 - (a) Institute Cargo Clauses (A)
 - (b) Institute War Clauses (Cargo)
 - (c) Institute Strikes Clauses (Cargo)
 - (d) Institute Cargo Clauses (Air) excluding sending by Post
 - (e) Institute War Clauses (Air Cargo) excluding sending by Post.
 - (f) Institute Strikes Clauses (Air Cargo)
 - (g) Special Replacement Clauses (Air)
 - (h) Institute Theft, Pilferage and Non-delivery Clauses

(j) Installation All Risks Insurance

- (1) The Contractor shall insure the Facilities or part thereof in the joint names of the Contractor and Employer.
 - (a) from the date following the completion of the first unloading at the Site of the Plant or part thereof and other materials (to be used for construction or erection) and from commencement of work at Site until issuance of Operational Acceptance Certificate against any loss or damage caused by any of the Contractor's risks and any other risks specified in para (h) "Insurance of the Facilities" hereof and
 - (b) during the Defects Liability Period against any loss or damage which is caused either:
 - (i) by the Contractor in completing any outstanding work or complying with his obligations under Clause 27 of General Conditions, or
 - (ii) by any of the Contractor's risks and any other risks specified in Sub-Para (h) "Insurance of Facilities" hereof which occurred prior to the Risk Transfer Date.
- (2) The sum insured shall be the full replacement value at the Site, which includes:

- (a) (i) FOB value of imported Plant to be erected
- (ii) Ex-factory value of Indigenous Plant to be erected, if any
- (b) freight and insurance including local transport
- (c) customs duties and taxes etc.
- (d) cost of erection
- (e) cost of civil engineering work including escalation
- (f) clearance of debris (@ 5 % of total cost of works)
- (g) amount of Third Party Liability Insurance

Plus 30% to cover any additional costs resulting from loss or damage thereof.

(k) General

Should a loss be sustained, the Contractor shall replace or repair any loss or damage at his own cost and complete the Facilities in accordance with the Contract as soon as possible after occurrence of such loss or damages, without waiting for the settlement of the insurance claim.

(l) Contractor to Notify Insurers

- (1) It shall be the duty of the Contractor to notify the insurers of any such insurances referred to above of any matter or event which by the terms of such insurances are required to be so notified. All formalities in connection with insurance survey(s) shall be the sole responsibility of the Contractor. The Contractor shall indemnify and keep indemnified Employer against all loss, claims, demands, proceedings, costs, charges and expenses whatsoever arising out of or resulting from any default by the Contractor in complying with the requirements of this Sub-Clause whether as a result of the avoidance of any such insurance or otherwise.
- (2) In case of any insurance claim, the Contractor shall pursue the insurance claim if any, till such time final settlement of such insurance claims is affected.

(m) Currency of Insurance

All Policies of Insurance under the Contract shall provide for payment of indemnity to be made in such amounts as will allow making good the loss of or damage to the whole or any part of the Facilities, or other requirements under the Contract and in a freely convertible currency.

(n) Procurement of Insurance Policies

The Contractor shall submit to the Project Manager for review, the draft of the insurance policies to be procured under this Contract as soon as possible after receipt of Notification of Award so that terms of the policies may be agreed and approved by the Employer.

(o) Insurance Company

Cargo/marine insurance shall be effected with reputed insurers from any eligible source country acceptable to the Employer. All other insurances shall be effected with National Insurance Company (NIC) of Pakistan or any other insurance company operating in Pakistan and acceptable to the Employer.

(p) Amounts not recovered

The Contractor shall bear the Excesses/Deductibles and loss not covered by the insurance in accordance with his responsibility under the Contract.

Appendix 4 - Time Schedule

Bidder shall provide a detailed program in bar chart / CPM / PERT in MS Project format showing the sequence of work items by which he proposes to complete the work of the entire Contract. The program should indicate the sequence of work items and the period of time during which he proposes to complete the Facilities including the activities like designing, testing of towers and other plant, submittal of drawings, ordering and procurement of materials, manufacturing, delivering, construction of civil works, installation, testing and commissioning of Facilities to be supplied and executed under the Contract.

The Contractor shall ensure the availability of following number of dedicated crews with requisite T&P during construction of civil works (tower foundation) and installation activities (tower erection & stringing) and shall show in their detailed program in bar charts:

1. Foundation of Towers : Minimum 10 Nos of crews
2. Erection of Towers : Minimum 10 Nos of crews
3. Stringing:
 - i. Conductor/OPGW stringing: Minimum 03 Nos of crews
 - ii. Dead Ending: Minimum 05 Nos of crews
 - iii. Spacer/Damper installation & Jumpering: Minimum 05 Nos of crews

The above stated crews are minimum requirement; however, the Contractor shall be fully responsible to deploy more crews to complete the Facilities in Contractual time period.

After award of Contract, the Contractor shall also update the said schedule every month during the period of execution of the contract and submit the same to the Employer on monthly basis.

Appendix 5 - List of Major Items of Plant and Services and List of Approved Subcontractors

A list of major items of plant and services is provided below.

The following Subcontractors and Manufacturers are approved for carrying out the item of the facilities indicated. Where more than one Subcontractor is listed, the Contractor is free to choose between them, but it must notify the Employer of its choice in good time prior to appointing any selected Subcontractor. In accordance with GCC Sub clause 19.1, 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 and Manufacturers	Nationality

Appendix 6 - Scope of Works and Supply by the Employer (NOT APPLICABLE)

If the employer decided that it is expedient to supply some plant items from its own inventory, the contractor shall be responsible for transportation of material from employer Warehouse/Store to the site at its own cost and without any additional cost to employer.

Appendix 7 - List of Documents for Approval or Review

Pursuant to GCC Sub clause 20.3.1, 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 18.2 (Program of Performance), the documents including but not limited to the following documents for

(A) Approval

- 1.....
- 2.....
- 3.....

(B) Review

- 1.....
- 2.....
- 3.....

Appendix 8: Functional Guarantees ... (NOT APPLICABLE)

1. General

This Appendix sets out

- (a) the functional guarantees referred to in GCC Clause 28 (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 calculating 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:

3. Functional Guarantees

Subject to compliance with the foregoing preconditions, the Contractor guarantees as follows:

3.1 Production Capacity

3.2 Raw Materials and Utilities Consumption

4. Failure in Guarantees and Liquidated Damages

4.1 Failure to Attain Guaranteed Production Capacity

If the production capacity of the facilities attained in the guarantee test, pursuant to GCC Subclause 25.2, is less than the guaranteed figure specified in para. 3.1 above, but the actual production capacity attained in the guarantee test is not less than the minimum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities, pursuant to GCC Subclause 28.3, then the Contractor shall pay liquidated damages at the rate of _____ for every complete 1% of the deficiency in the production capacity of the Facilities, or at a proportionately reduced rate for any deficiency, or part thereof, of less than a complete 1%.

4.2 Raw Materials and Utilities Consumption in Excess of Guaranteed Level

If the actual measured figure of specified raw materials and utilities consumed per unit (or their average total cost of consumption) exceeds the guaranteed figure specified in para. 3.2 above (or their specified average total cost of consumption), but the actual consumption attained in the guarantee test, pursuant to GCC Subclause 25.2, is not more than the maximum level specified in para. 4.3 below, and the Contractor elects to pay liquidated damages to the Employer in lieu of making changes, modifications and/or additions to the Facilities pursuant to GCC Subclause 28.3, then the Contractor shall pay liquidated damages at the rate of _____ for every complete 1% of the excess consumption of the Facilities, or part thereof, of less than a complete 1%.

4.3 Minimum Levels

Notwithstanding the provisions of this paragraph, if as a result of the guarantee test(s), the following minimum levels of performance guarantees (and consumption guarantees) are not attained by the Contractor, the Contractor shall at its own cost make good any deficiencies until the Facilities reach any of such minimum performance levels, pursuant to GCC Subclause 28.2:

- (a) production capacity of the Facilities attained in the guarantee test: 95% of the guaranteed production capacity

and/or

- (b) average total cost of consumption of all the raw materials and utilities of the Facilities: 105% of the guaranteed figures.

4.4 Limitation of Liability

Subject to para. 4.3 above, the Contractor's aggregate liability to pay liquidated damages for failure to attain the functional guarantees shall not exceed _____ percent (____ %) of the Contract price

Appendix 9 – Environmental Impact Assessment (EIA); including Environmental Management Plan (EMP)

For EIA/EMP, please refer to <https://www.adb.org/projects/documents/pak-59002-001-eia>

Appendix 10 – RESETTLEMENT PLANNING (RP)

(To be provided through an Amendment)

Performance Security

.....*Bank's name, and address of issuing branch or office*.....

Beneficiary:*Name and address of the employer*

Date:.....

Performance Guarantee No.:

We have been informed that *name of the contractor*. (hereinafter called "the Contractor") has entered into Contract No. *reference number of the contract*. dated with you, for the execution of *name of contract and brief description of plant and services*. (hereinafter called "the Contract").

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

At the request of the Contractor, we *name of the bank*. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *name of the currency and amount in words*². (*amount in figures*.) such sum being payable in the types and proportions of currencies in which the Contract Price is payable, 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(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire no later than the earlier of

(a) 18 months after our receipt of

- (i) a copy of the Completion Certificate; or
- (ii) a registered letter from the Contractor, attaching a copy of the notice to the project manager that the Facilities are ready for commissioning, and stating that 14 days have elapsed from receipt of such notice (or 7 days have elapsed if the notice was a repeated notice) and the project manager has failed to issue a Completion Certificate or inform the Contractor in writing of any defects or deficiencies; or
- (iii) a registered letter from the Contractor stating that no Completion Certificate has been issued but the Employer is making use of the Facilities; or

(b) the ____ day of ____, 2____.

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

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 (or ICC Publication No. 758 as applicable), except that subparagraph (ii) of Sub-Article 20(a) is hereby excluded.³

.....
Signature(s) and seal of bank (where appropriate)

-- Note to Bidder --

If the institution issuing the performance security is located outside the country of the employer, it shall be counter guaranteed by the Schedule Bank in Pakistan.

¹² The guarantor shall insert an amount representing the percentage of the contract price specified in the contract and denominated either in the currency (ies) of the contract or a freely convertible currency acceptable to the employer.

³ Or the same or similar to this clause specified in the Uniform Rules for Demand Guarantees, ICC Publication No. 758, where applicable.

Advance Payment Security

..... Bank's name and address of issuing branch or office.....

Beneficiary: Name and address of the employer

Date:

Advance Payment Guarantee No.:

We have been informed that name of the contractor. (hereinafter called "the Contractor") has entered into Contract No. reference number of the contract. dated with you, for the execution of name of contract and brief description of plant and services. (hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, an advance payment in the sum name of the currency and amount in words⁴. (..... amount in figures.) is to be made against an advance payment guarantee.

At the request of the Contractor, we name of the bank. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of name of the currency and amount in words⁵. (..... amount in figures.) 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:

- (a) used the advance payment for purposes other than the costs of mobilization and cash flow support in respect of the Works; or
- (b) has failed to repay the advance payment when it has become due and payable in accordance with the conditions of the Contract, specifying the amount payable by the Contractor.

It is a condition for any claim and payment under this guarantee to be made that the advance payment referred to above must have been received by the Contractor on its account number contractor's account number. at name and address of the bank.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as indicated in copies of interim statements or payment certificates, which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate, indicating that 80% of the Contract Price has been certified for payment, or on the ... day of,⁶ whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458 (or ICC Publication No. 758 as applicable)..
Signature(s) and seal of bank (where appropriate)

If the institution issuing the advance payment security is located outside the country of the employer, it shall be counter guaranteed by the Scheduled Bank in Pakistan

¹⁴ The guarantor shall insert an amount representing the amount of the advance payment denominated either in the currency(ies) of the advance payment as specified in the contract, or in a freely convertible currency acceptable to the employer.

² 5Foot note 1.

³ 6Insert the expected expiration date of the time for completion. The employer should note that in the event of an extension of the time for completion of the contract, the employer would need to request an extension of this guarantee from the guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [6 months][1 year], in response to the Employer's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Sample

MONTHLY PROGRESS REPORT



1. Project Key Data

FORMAL PROJECT NAME
PROJECT SUMMARY
CONTRACT SCOPE
CONTRACT TYPE
EXICUTING AGENCY
MAIN CONTRACTOR / SUPPLIER
PROJECT MANAGEMENT COMPANY
CONTRACT AMOUNT
COMPLETION DATE
CONTRACT SIGNING DATE
COMMENCEMENT DATE

2. Executive Summary

4. Contract Start-up Activities and Submittals

4.2 Residual Tender Stage Actions

Clause (*)	Description	Responsible Party	Planned Date	Actual Date	Comments
ITB 42.1	Issuance of Letter of Acceptance (LoA)				
ITB 19.6	Return Bid Security to Contractor				
ITB 43.2	Contract Agreement Signature				

4.3 Contract Requirements

Clause (*)	Description	Responsible Party	Planned Date	Actual Date	Comments
GCC 4.2	Provision of Performance Security				

4.4 Contract Activities Required Within 30 Days of Commencement Date

Clause (*)	Description	Responsible Party	Planned Date	Actual Date	Comments

5. Risk Management

Ref	Description	Impact Rating	Likelihood Rating	Risk Level	Mitigation Measure	Responsible Party	Comments

6. Project Monitoring

6.1 Project status as of September 27, 2023:

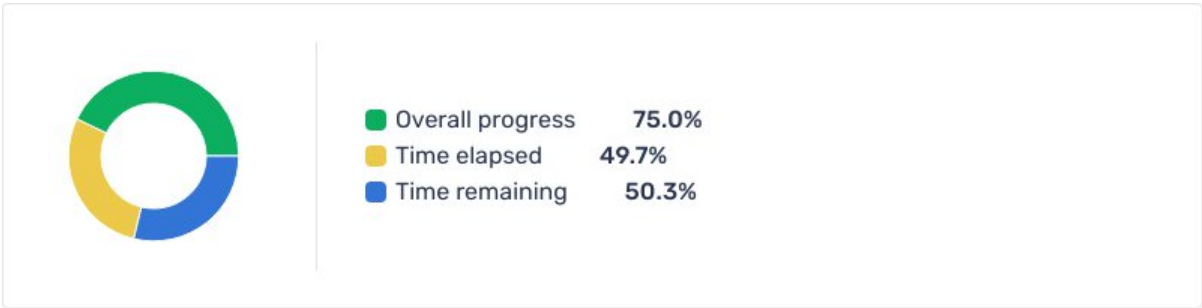
Project Status as of Date	
Commencement Date	
Completion Date	
Time Elapsed	
Planned Progress	
Actual Progress	
Expected Completion Date	
Variance to Completion	

6.2 Level 2 Program

Ref	Description	Original Program Milestone	Updated Completion Date	Variance
1				
2				
3				

6.3 Program Progress

6.4 Program Overview



Critical Path Forward

6.5 One Month Look Ahead

Target Description	Planned Date	Completion Date	Completed

7. Variations and Claims

7.1 Summary

Total Estimated Variations Cost	
Total Approved Variations Cost	
Total Variations Pending Approval Cost	
Total Claims Submitted Amount	
Total Claims Certified Amount	
Total Claims Pending Certification Amount	
Total Estimated Contract Cost Changes	
Total Approved Contract Cost Changes	
Total Pending Contract Cost Changes	
Prior Contract Price	
Estimated Revised Contract Cost	
Approved Revised Contract Cost	

7.2 Variation Register

Ref	Variation Description	Date Instruction Issued	Estimated Variation Cost	Approved Variance Cost	Current Status
1					
2					

7.3 Claim Register

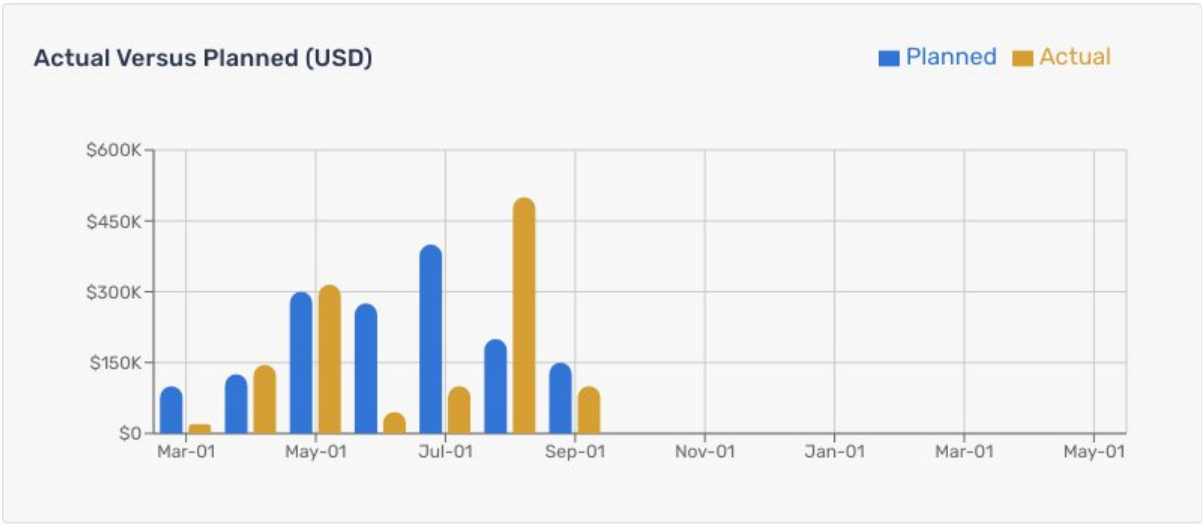
Ref	Description	Submission of Notice of Claim	Submission of Fully Detailed Claim	Claimed Amount	Amount Certified	Current Status
1						

8. Financial Management

8.1 Actual Project Payments

Description	Date	Cost
Total		1,225,000

8.2 Actual Versus Planned Project Payments



9. Disputes

Dispute Description	Dispute Status

10. Goods / Equipment

10.1 Goods / Equipment Packages Status

Description	FAT Status	Custom Clearance Status	Planned Delivery Date	Actual Delivery Date	Cost	Invoiced

11. Engineering / Design Documents

11.1 Engineering

Description	Percentage Complete	Name of Approver	Approval Stage	Design Document Cost	Invoiced

12. Environment, Social Health & Safety, and Security Related Obligations

12.6 Complaints (Grievances)

Name of Complainant	Complaint Description	Date Filed	Effected Person(s)	Responsible Party	Complaint Status

13. Site Photographs

14. Completion of Work and Contract Closure Activities

Completion Activity Description	Planned Date	Achieved Date	Activity Completed

15. Contract Details

15.1 Contract Details & Key Dates

Contract Title	
Contract Number	
Contract Type	
Contract Scope	
Location	
Original Contract Amount	
Date of Issuance of Letter of Acceptance	
Contract Signing Date	
Contract Commencement Date	
Contract Effective Date	
Contract Project Start Date	
Contract Time for Completion (days)	
Original Contract Completion Date	
Financer	
Executing Agency	
Contractor / Supplier	
Design Consultant (if applicable)	
Project Manager	
Defects Liability Period / warranty	
ADB Loan Effectiveness Date	
ADB Loan Closing Date	

16. Communications and Reporting

16.1 Contact Details

Ref	Entity	Name	Title	Position	Phone	Email
Executing Agency		ORO				
Implementing Agency						
Contractor / Supplier						
Engineer / PMC						
Financer						
Dispute Board Members						
Other						

ANNEXURE – A

- FORM: Undertaking for Type Test of Equipment
- Revised Type Test Policy NGC (formerly NTDC)



NATIONAL TRANSMISSION & DESPATCH CO. LTD

Company Secretary

No. NTDC/CS/ 2730-35

Dated: 03 - 02 - 2023

NOTIFICATION

Approval of revised NTDC type test policy

The Board of Directors of National Transmission & Despatch Company Limited (NTDC) in its 240th meeting held on 20.01.2023 against additional agenda item No. 01 has resolved and approved the revised NTDC type test policy (Annex-A).


Azhar Saleem
Company Secretary

Copy to:

1. Managing Director
2. All Deputy Managing Directors
3. Chief Financial Officer
4. General Manager (D&E)

Type Test Requirements of NTDC (Revised Policy)

1 Foreword

1.1 This type test policy will come into effect at once and shall replace the existing type test policy which was issued in 2019.

1.2 This policy shall be applicable to:

- a. All Future Procurement
- b. All ongoing Tenders
- c. Only for those Contracts where approval of equipment/material is not accorded.

1.3 This policy consists of the following:

- a. Policy Document
- b. Part-I contains the list of approved/STL member laboratories.
- c. Part-II deals with the type testing of Grid Station Equipment.
- d. Part-III deals with the type testing of Transmission Line Equipment.

1.4 Technical Committee of BOD may issue any amendment to this policy as and when required.

2 Type Test Policy

2.1 The bidder shall offer type tested equipment or if the equipment is not previously type tested, the type tests shall be carried out in line with relevant IEC/other international applicable standard as mentioned in the policy.

2.2 The type test policy covers the scope as given in Part-II and III of this policy. However, the equipment which are not mentioned in this type test policy shall be tested as per relevant NTDC specifications.

2.3 The Type Test reports shall remain valid unless and until.

- i. Voltage class has changed
- ii. Short Circuit level has changed ¹
- iii. The applicable standards have changed.
- iv. The design/construction has changed.
- v. Manufacturing Facility has changed.

¹ If all other conditions mentioned under Clause 2.3 (i, iii, iv & v) are not violated, the dielectric tests shall be considered acceptable.

- 2.4 The Test Report shall include complete identification of the equipment and other necessary information as mentioned in the relevant IEC/ other international applicable standard along with drawings stamped by the concerned laboratory.
- 2.5 The following provisions have been made in this Policy with respect to bidding process:
- i. The Bidder shall submit an unconditional Undertaking, duly signed and stamped by bidder and supported by manufacturer(s) accordingly in technical bid, that in case of award of contract if submitted type test reports are not according to NTDC type test policy, he will carry out type tests as per NTDC Type Test Policy within the quoted Bid price and without affecting the delivery/ completion period as mentioned in the Bidding Documents. In case of failure to submit an Undertaking of type tests as per NTDC type test policy along with the bid or in response to post bid clarification:
 - a. In supply contract, bid shall be rejected.
 - b. In EPC contract, such manufacturer shall not be accepted, and bidder will be bound to replace the same with acceptable manufacturer. In case of noncompliance, the bid shall be rejected.
 - ii. within 07 days from approval of technical data/ drawings, the contractor shall submit schedule of type testing from laboratory.
 - iii. After award of contract, the bidder shall be required to perform requisite type tests before delivery of equipment without affecting the delivery/completion period as mentioned in the Bidding Document within the quoted bid price. In case of delay or non-compliance of the said requirement, NTDC reserves the right to cancel the contract agreement including encashment of performance guarantee and initiate the process for blacklisting as per NTDC SOP for blacklisting.

Note:

- a) For the purpose of type testing, latest IEC/ other applicable international standard as mentioned in the policy shall be applicable.
- b) For service conditions of material/equipment covered in this policy, the relevant NTDC specification shall be applicable.
- c) The manufacturers may avail this opportunity for carrying out type tests as per NTDC Policy. NTDC can also nominate its inspectors upon request provided that all such costs shall be borne by the manufacturer.
- d) NTDC reserves the right to change all or any parts of the type test policy at any time in the best interest of company.
- e) For test grouping, sampling and sequence for the type testing, the procedure/method mentioned in IEC/any other relevant international standard shall be applicable.
- f) For type test reports from ISO/IEC 17025 certified laboratories, as permitted in part II & III of the policy, in case of ambiguity in the independent status of the laboratory, the reports shall be acceptable upon providing the certificate from the manufacturer that the laboratory is independent from the manufacturer and offering extended warranty twice of the original.



- g) In case of contradiction between NTDC specification & this type test policy, this policy shall prevail.

Abdul Haq
Manager (Tech), HV&SC Lab, Rawat
(Member)

Azhar Iqbal
Manager(MP&M) NTDC
(Member)

Anees Ahmad
Chief Engineer (T/L Design) NTDC
(Member)

Taqi-ud-din
Chief Engineer (P&C) NTDC
(Member)

Shahid Shafi Sial
Chief Engineer (SS Design) NTDC
(Convener)

Part-I

(List of Approved/STL member Laboratories)

1. All STL member Laboratories and their subsidiaries/affiliates mentioned on their website
www.stl-liaison.org/web/03_members.php
2. Kinectrics Laboratory
800 Kipling Ave. Etobicoke, ON M8Z 5G5,
Canada
3. Polotecnico Di Milano
Piazza Leonardo da Vinci, 32, 20133 Milan
Italy
4. EGU HV Laboratory A.S
Podnikatelska 267 190 11 Prague 9, Bechovice
Czech Republic
5. High Voltage and Short Circuit (HV&SC) Laboratory
Rawat, Islamabad, Pakistan
6. IREQ, Canada
7. CRIEPI, JAPAN
8. TUV Labs, Italy



Part-II

Grid Station Equipment

1. This part contains the type testing requirements relating to the Grid Station Equipment.
2. The Equipment / material covered under this policy is mentioned hereunder:
 - a. Circuit Breaker
 - b. Disconnecter
 - c. Inductive Voltage Transformer/Capacitive Voltage Transformer/CCVT
 - d. Current Transformer
 - e. Bushings (Transformers, Shunt Reactors & SF₆ to Air (GIS))
 - f. Gas Insulated Switchgear (GIS)
 - g. Surge Arrester
 - h. Post Insulators
 - i. Hardware (Connectors and Strings assemblies)
3. The type test to be performed on the above equipment from **Laboratories as per Part-I** of this policy are mentioned below:

Sr. #	Equipment Name	Test to be performed
01	Circuit Breaker (IEC 62271-100)	i. Dielectric Tests ii. Temperature-rise Tests iii. Short-time withstand current and peak withstand current tests iv. Short circuit current making and breaking tests
02	Disconnectors, Earth Switch and Fast Earth Switch (IEC 62271-102)	i. Dielectric Tests ii. Continuous Current Tests iii. Short-time withstand current and peak withstand current tests
03a	Inductive Voltage Transformer (IVT) (IEC 61869-1 & 61869-3)	i. Temperature-rise test ii. Impulse voltage withstand test on primary terminals iii. Wet test for outdoor type transformers iv. Chopped impulse voltage withstand test on primary terminals v. Short circuit withstand capability test
03b	Capacitive Voltage Transformer (CVT) / CCVT (IEC 61869-1 & 61869-5)	i. Temperature-rise test ii. Chopped impulse test iii. Impulse voltage withstand test on primary terminals iv. Wet test for outdoor type transformers v. Short circuit withstand capability test
04	Current Transformer (CT) (IEC 61869-1 & 61869-2)	i. Temperature-rise test ii. Impulse voltage withstand test on primary terminals iii. Wet test for outdoor type transformers vi. Chopped impulse voltage withstand test on primary terminals vii. Short-time current tests

Sr. #	Equipment Name	Test to be performed
05	Bushings (Transformer, Shunt Reactor, SF₆ to Air(GIS)) (IEC 60137)	i. Wet power-frequency voltage withstand test ii. Long duration power frequency voltage withstand test (Ur≥170kV) iii. Lightning impulse voltage withstand test. iv. Wet switching impulse voltage withstand test ((Ur≥300kV) v. Temperature rise test. vi. Verification of thermal short-time current withstand (if required)
06	Gas Insulated Switchgear (GIS) (IEC 62271-203)	i. Tests to verify the insulation level of the equipment and dielectric tests on auxiliary circuits ii. Tests to prove the temperature rise of any part of the equipment and measurement of the resistance of the main circuit iii. Tests to prove the rated peak and the rated short-time withstand current iv. Tests to verify the making and breaking capacity of the included switching devices
09a	Connectors (NEMA CC1 & ANSI 119.4)	i. Heat cycle Test ii. RIV and Corona Tests
09b	String Assemblies (Tension and Suspensions) (NTDC spec P-Draft and relevant international standards)	i. Heat Cycle Test (Only for Tension clamp of Tension Assembly if its current carrying device) ii. Corona Test

4. All other type tests not mentioned in point-3 above but are required as per relevant IEC/international standard, may be performed as under:

Sr. #	Equipment Name	Test to be performed	Requirement
01	Circuit Breaker	All other type tests not mentioned in point-3 above but are required as per IEC 62271-100	i. Any Independent laboratory accredited by ISO/IEC 17025 ii. Any laboratory as per Part-I iii. Inspection reports issued by any STL Laboratory
02	Disconnectors, Earth Switch and Fast Earth Switch	All other type tests not mentioned in point-3 above but are required as per IEC 62271-102	
03a	Inductive Voltage Transformer (IVT)	All other type tests not mentioned in point-3 above but are required as per IEC 61869-1 & 61869-3	
03b	Capacitive Voltage Transformer (CVT) / CCVT	All other type tests not mentioned in point-3 above but are required as per IEC 61869-1 & 61869-5	
04	Current Transformer (CT)	All other type tests not mentioned in point-3 above but are required as per IEC 61869-1 & 61869-2	

Sr. #	Equipment Name	Test to be performed	Requirement
05	Bushings ² (Transformer, Shunt Reactor, SF ₆ to Air(GIS))	All other type tests not mentioned in point-3 above but are required as per IEC 60137	
06	Gas Insulated Switchgear (GIS)³	All other type tests not mentioned in point-3 above but are required as per IEC 62271-203	
07	Surge Arrester	All type tests as per IEC 60099-4	
08	Post Insulators (PI)	All type tests as per IEC 60168 & 60273.	
09a	Connectors	All other type tests not mentioned in point-3 above but are required as per List in Annex-A.	
09b	String Assemblies	All other type tests not mentioned in point-3 above but are required as per List in Annex-A.	

Note: In case some tests are categorized as special test in the IEC/relevant international standard while the same are mentioned under type tests in NTDC relevant specification, the same may be performed as per requirement mentioned above.

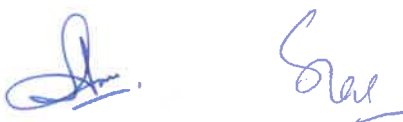
5. If the offered Circuit Breaker or Disconnecter has different continuous current rating than that of the type tested one, then only Temperature rise / continuous current test shall be re-performed from either of the following, provided that the type test reports do not violate the criteria as mentioned under clause 2(3) of this policy:
 - i. Any Independent laboratory accredited by ISO/IEC 17025
 - ii. Any laboratory as per Part-I
 - iii. Inspection report issued by any STL Laboratory
6. If the offered instrument transformer (IVT, CVT/CCVT or CT) has different ratio, VA burden, type of cores (protection & metering) or number of cores from the type tested one⁴, then only Temperature rise and accuracy tests shall be re-performed from either of the following, provided that the type test reports do not violate the criteria mentioned under Clause 2.3 of this policy:
 - i. Any Independent laboratory accredited by ISO/IEC 17025
 - ii. Any laboratory as per Part-I

² Transformer, Shunt Reactor and SF₆ Bushings shall either be from M/s Trench Hefley (France/ Switzerland); M/s Passoni & Villa Italy; M/s F&G Germany & M/s ABB Sweden which have proven performance in NTDC system or pre-type tested bushings from an equivalent manufacturer duly tested in accordance with this policy.

³ Apart from the tests mentioned in IEC for GIS, the following major equipment of GIS shall be type tested in accordance with relevant IEC standards and this policy:

- a) Instrument Transformer Switch
- b) Circuit Breaker
- c) Disconnecter, Earthing Switch and Fast Earthing

⁴ The number of cores for the type tested current transformer shall be higher or equal than the offered current transformer.





- iii. Inspection reports issued by any STL Laboratory
7. Chief Engineer (SS Design) NTDC shall be sole judge for the interpretation / applicability for this policy relating to the equipment / material mentioned under Part-II.
8. Chief Engineer (SS Design) NTDC may issue any clarification as and when required relating to Part-II of this policy.

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Part-III Transmission Line Equipment

1. This part contains the type testing requirements relating to the Transmission Line Equipment.
2. The Equipment / material covered under this policy is mentioned hereunder:
 - a. Conductor
 - b. Hardware and accessories
 - c. Spacer dampers
 - d. Stock Bridge Vibration Dampers
 - e. Insulators (Toughened Glass/Porcelain/Non-Ceramic Composite)
 - f. RTV Coating Material
 - g. OPGW
 - h. FOC
3. Chief Engineer (TL Design) NTDC shall be the sole judge for the interpretation / applicability for this policy relating to the equipment / material mentioned under Part-III.
4. Chief Engineer (TL Design) NTDC may issue any clarification as and when required relating to Part-III of this policy.
5. The type tests to be performed on the above equipment from **Labs as per Part-I** of this policy, or otherwise as mentioned against each test, are given in table below:
6. Visual examination, dimensional check and material verification, etc. of the samples to be tested shall be carried out and made part of test report before conducting each of the type test.

S. #	Equipment Name	Tests to be performed		Relevant Standard	Testing Labs
1	Conductor	i.	Stress – Strain Test/Stress – Strain Curves	NTDC Specification & relevant IEC/ any other International Standards mentioned in NTDC Specification. IEC 61089.	a. Any lab as mentioned in Part-I; b. Any Independent lab accredited by ISO/IEC 17025; c. Tests at manufacturer's Lab under witness of STL Lab
		ii.	Joints in Aluminum Alloy/Aluminum Wires		
		iii.	Ultimate Tensile Strength and Longitudinal Smoothness Test		
2	Porcelain/ Glass Disc Insulator	i.	Dry Power Frequency Withstand Voltage Test	NTDC Specification & relevant IEC/ any other International Standards mentioned in	a. Any lab as mentioned in Part-I.
		ii.	Wet Power Frequency Withstand Voltage Test		
		iii.	Dry Lightning Impulse Withstand Voltage Test		

S. #	Equipment Name	Tests to be performed		Relevant Standard	Testing Labs
		iv.	Radio Interference Voltage (RIV) test	NTDC Specification. IEC 60383, IEC 60437, IEC 61211, IEC 61467, IEC 60507	
		v.	Thermal-Mechanical Performance test		
		vi.	Steep Wave Front Impulse test		
		vii.	Power Arc test (Short String)		
		viii.	Combined Mechanical and Electrical Strength Test		
		ix.	Residual Strength test		a. Any lab as mentioned in Part-I.
		x.	Impact test		b. Any Independent lab accredited by ISO/IEC 17025;
		xi.	Artificial Pollution Performance test		c. Tests at manufacturer's Lab under witness of STL Lab
3	Non-Ceramic Composite Insulator Units	i.	Tests on interfaces and connections of end fittings: a) Sudden load release pre-stressing b) Thermal-mechanical pre-stressing c) Water immersion pre-stressing d) Verification tests i. Visual Examination ii. Steep-front impulse voltage test iii. Dry power-frequency voltage test	NTDC Specification & relevant IEC/ any other International Standards mentioned in NTDC Specification. IEC 61109, IEC 62217, IEC 61467, IEC 60507	a. Any lab as mentioned in Part-I
		ii.	Tests on shed and housing material: a) Accelerated weathering test b) Tracking and erosion test c) Artificial Pollution test d) Flammability test e) Hardness test		a. Any lab as mentioned in Part-I
		iii.	Tests on core material: i. Dye penetration test		a. Any lab as mentioned in Part-I;
					b. Any Independent lab accredited by ISO/IEC 17025;
					c. Tests at manufacturer's

S. #	Equipment Name	Tests to be performed		Relevant Standard	Testing Labs
					Lab under witness of STL Lab
			ii. Water diffusion test		
		iv.	Assembled core-load time test: a) Determination of the average failing load of the core of the assembled insulator b) Verification of the 96 h withstand load c) Control of the slope of the strength-time curve of the insulator		a. Any lab as mentioned in Part-I; b. Tests at manufacturer's Lab under witness of STL Lab
		v.	Damage limit proof test and test of the tightness of the interface between end fittings and insulator housing		
		vi.	High pressure water withstand test		
		vii.	Brittle fracture resistance test		
		viii.	Torsional load test		
		ix.	Grading device test		
		x.	Recovery of hydrophobicity test		
		xi.	Artificial Pollution Performance Test		
4	Complete Hardware String with fittings including insulators for Composite /Porcelain/ Glass Disc Insulators	i.	Wet Power Frequency test	NTDC Specification & relevant IEC/ any other International Standards mentioned in NTDC Specification. IEC 60383, IEC 60060-1, IEC 61109, IEC 61467, IEC 61284	a. Any lab as mentioned in Part-I;
		ii.	Dry Lightning Impulse Withstand Voltage test		
		iii.	Wet Switching Impulse Withstand Voltage test (for voltages $\geq 500\text{kV}$)		
		iv.	Power Arc test		
		v.	Corona and RIV test		
		vi.	Voltage Distribution Test		
		vii.	Mechanical Strength test		
5	Conductor/ OPGW/ Shield wire Hardware & Accessories	i.	Heat Cycle test	NTDC Specification & relevant IEC/ any other International Standards mentioned in	a. Any lab as mentioned in Part-I;
		ii.	Magnetic Loss test		
		iii.	Fault Current Test		
		iv.	Corona & RIV Test		
		v.	Power Arc Test		
		vi.	Galvanization test		

S. #	Equipment Name	Tests to be performed		Relevant Standard	Testing Labs
		vii.	Resistance to Conductor/OPGW/ Shield wire Slippage test	NTDC Specification. IEC 61284	a. Any lab as mentioned in Part-I;
		viii.	Mechanical test on complete string		b. Any Independent lab accredited by ISO/IEC 17025;
		ix.	Tensile Tests on individual hardware items		c. Tests at manufacturer's Lab under witness of STL Lab
6	RTV Coating Material	i.	Inclined Plane Tracking & Erosion Test	NTDC Specification & relevant IEC/ any other International Standards mentioned in NTDC Specification. IEC 60587, IEC 61109, IEC 60507, IEC TS 62073	a. Any lab as mentioned in Part-I
		ii.	Accelerated Weathering Test (1000 Hours)		
		iii.	Hydrophobicity Recovery by Corona Test Method		
		iv.	Dry Arc Resistance		
		v.	Dielectric Strength Test		
		vi.	Volume & Surface Resistivity Test		a. Any lab as mentioned in Part-I;
		vii.	Dissipation Factor Test		b. Any Independent lab accredited by ISO/IEC 17025;
		viii.	Artificial Pollution Test by Salt Fog Method		c. Tests at manufacturer's Lab under witness of STL Lab
		ix.	Angle of Hydrophobicity		
7	Spacer Damper (Twin, Triple, Quad)	i.	Corona & RIV Test	NTDC Specification & relevant IEC/ any other International Standards mentioned in NTDC Specification. IEC 61854	a. Any lab as mentioned in Part-I;
		ii.	Simulated Short Circuit Current Test		
		iii.	Flexibility Test		
		iv.	Energy Absorbing Test		
		v.	Simulated Oscillation Fatigue Test		
		vi.	Conical Fatigue Test		
		vii.	Characterization of Elastic and Damping Properties		
		viii.	Damping studies/ verification of vibration behavior by Computer Program		
		ix.	Galvanization		
		x.	Clamp Slippage Test • Longitudinal Slip • Torsional Slip		a. Any lab as mentioned in Part-I;




S. #	Equipment Name	Tests to be performed		Relevant Standard	Testing Labs
		xi.	Bolt Torque Test		b. Any Independent lab accredited by ISO/IEC 17025; c. Tests at manufacturer's Lab under witness of STL Lab
		xii.	Electrical Resistance Test		
		xiii.	Elastomer Tests: a) Temperature endurance test b) Temperature sensitivity test c) Specific Gravity and Density Test d) Shore A Hardness Test e) Electrical Resistance Test f) Ultraviolet Resistance Test g) Ozone Resistance Test h) Tension and Elongation Test i) Tear Resistance Test j) Compression Set at 70h, 20°C-100°C-0°C k) Rebound Resilience at 20°C-100°C-0°C l) Air-Oven Deterioration Test 72h, 70°C m) Deterioration in Oils 72h, 70°C n) Water Immersion Test o) Abrasion test		a. Any lab as mentioned in Part-I; a. Any lab as mentioned in Part-I; b. Any Independent lab accredited by ISO/IEC 17025; c. Tests at manufacturer's Lab under witness of STL Lab
8	Stockbridge Vibration Damper (for Conductor, Shield wire & OPGW)	i.	Corona & RIV Test (<i>only on SB Vibration Dampers for HV conductor</i>)	NTDC Specification & relevant IEC/ any other International Standards mentioned in NTDC Specification. IEC 61897	a. Any lab as mentioned in Part-I;
		ii.	Damper Performance Tests, which include the below: a. Damper Characteristic Test b. Damper Effectiveness Evaluation c. Verification of Vibration Behavior by Computer Program / Damping Studies		
		iii.	Vertical Fatigue Test		
		iv.	Galvanization		
		v.	Clamp Slippage Test		




S. #	Equipment Name	Tests to be performed		Relevant Standard	Testing Labs
		vi.	Bolt Torque Test		a. Any lab as mentioned in Part-I; b. Any Independent lab accredited by ISO/IEC 17025; c. Tests at manufacturer's Lab under witness of STL Lab
		vii.	Attachment of Weights to Messenger Cable Test		
		viii.	Attachment of Clamp to Messenger Cable Test		
9	OPGW (Optical Fiber Ground Wire)	i.	Performance Tests	IEEE-1138-2009 or Equivalent IEC Standards	a. Any lab as mentioned in Part-I; b. Any Independent lab accredited by ISO/IEC 17025; c. Tests at manufacturer's Lab under witness of STL Lab
		ii.	Electrical tests		
		iii.	Mechanical tests		
		iv.	Environment test		
10	FOC (Fiber Optic Cable)	i.	Performance Test	IEEE-1138-2009	a. Any lab as mentioned in Part-I; b. Any Independent lab accredited by ISO/IEC 17025; c. Tests at manufacturer's Lab under witness of STL Lab
		ii.	Electrical tests	ITU-TG 652 D	
		iii.	Mechanical tests	ASTM B398 B398 M, B415	
		iv.	Environment test	or Equivalent IEC Standards	

-----End of Document-----




Annex-A

Type Tests for Grid Station Hardware

1. Connectors (NEMA CC1 & ANSI 119.4)

- i. Heat cycle Test
- ii. RIV and Corona Tests
- iii. Mechanical Composition Test
- iv. Tensile Strength Test
- v. Elongation Test
- vi. Brinell Hardness Test
- vii. Cantilever Test
- viii. Corrosion Test
- ix. Mechanical Oscillation Test (*applicable on multi-angular connectors only*)
- x. Electrical Resistance Test
- xi. Temperature Rise Test
- xii. Tightening Torque Test

2. String Assemblies (Tension and Suspensions)

(NTDC spec P-Draft and relevant international standards)

- iii. Heat Cycle Test (Only for Tension clamp of Tension Assembly if its current carrying device)
- iv. Corona Test
- v. Mechanical Test
- vi. Resistance to Conductor Slippage Test
- vii. Resistance Test (only for Tension clamp of Tension Assembly)



ANNEXURE – B

- Contract Management Plan template

Form: Undertaking for Type Test of Equipment

The bidder must accomplish the undertaking on stamp paper with bidder's complete name and address.

Director General (Procurement), NGC

8th Floor Shaheen Complex

Egerton Road Lahore, Pakistan

UNDERTAKING

I / We, the undersigned, do hereby solemnly agree and undertake that,

- i. in case of award of Contract, if the submitted type test reports are not according to NGC's (formerly NTDC) Type Test Policy, the {...name of bidder...} will carry out type tests as per NGC (formerly NTDC) Type Test Policy within the quoted Bid price and without affecting the delivery/completion period as mentioned in the Bidding Documents;
- ii. {...name of bidder...} shall submit schedule of type testing from the testing lab within thirty (30) days from signing of Contract; and
- iii. after award of Contract, the {...name of bidder...} shall perform the requisite type tests before delivery of equipment without affecting the delivery/completion period as mentioned in the Bidding Documents within the quoted Bid price.

I undertake further that in case of delay or non-compliance of the above said requirements, NGC (formerly NTDC) reserves the right to cancel the contract agreement including encashment of performance guarantee and initiate the process of blacklisting as per NGC (formerly NTDC) SOP for blacklisting.

For and on Behalf of:

Authorized Signatory:

Sign:

Date:

Stamp/Seal:

“TDT”			
a)	Grade	60	
b)	Ultimate Tensile Stress, MPa	520	
c)	Minimum Guaranteed Yield Stress, MPa	415	
d)	Minimum Elongation in gauge length of 200mm/50mm	16% in 200mm & 18% in 50mm	
e)	Bend Ratio as per Clause 2.2.2 of Technical Provisions of the Bidding Documents	Up to 25mm 1.5t & Over 25mm 2.0t	
f)	Chemical Properties		
-	Carbon % ≤	0.26	
-	Manganese % ≤	1.35	
-	Phosphorus % ≤	0.04	
-	Sulfurs % ≤	0.05	
9.	Type of Steel Galvanizing	Hot Dip	
10.	Each member marked as per Clause 2.2.13 of Technical Provisions of the Bidding Documents	Yes	
11.	Type of Steel for Anti-theft Nuts & Bolts	ISO 898-1; min Gr. 8.8 Or equivalent	
	(a) Grade		
	(b) Tensile Strength, MPa	800 for t≤16mm 830 for t>16mm	
	(c) Minimum Guaranteed Yield Strength, MPa	640 for t≤16mm 660 for t>16mm	
	(d) Elongation % min.	12	
	(e) Shear Strength, MPa	450	
	(f) Bearing Strength, MPa	*	
	(g) Chemical Properties	*	
12.	Standard to be Followed for Material And Dimensions	ISO 898-1 & DIN 7990 or equivalent ISO 898-2 & ISO 4034 Or equivalent	
	- Bolts (Anti-Theft)	DIN 127/128	
	- Nut	ASTM F436M	
	- Spring Lock Washer		
	- Plain Washers		
13.	Size of:		
	- Bolt (Anti-Theft)	M16, M20 & M24	
	- Nut	M16, M20 & M24	
	- Spring Lock Washer	M16, M20 & M24	
	- Plain Washer	M16, M20 & M24	
14.	Fabrication:		
	(a) Minimum thickness of members for which holes drilled	12mm	
	(b) Maximum thickness of members for which holes punched	19mm	
	(c) Difference between diameter of bolt holes and bolt shank		

- Splice Joints	1.5mm		
- Others	1.5mm		
(d) Method of Marking of the member	Stamping before Galvanizing		
Galvanizing:			
(a) Standard for Galvanizing for steel section	ASTM A-123M		
(b) Galvanizing for members/plates, min gm/m ²	705		
(c) Standard of Galvanizing for bolts, nuts and spring lock washers	ASTM A-153M		
(d) Galvanizing for bolts, nuts and spring lock washers, min gm/m ²	345		
16. Weight of towers, including galvanization, gusset plates, nuts & bolts, tower hardware etc. kgs.			
(a) <u>Tower Type DS1</u>			
i- Basic Body (without Stubs)			
ii- Leg Extensions			
iii- (4 Nos. for complete tower)			
a. - do - 2.0 m	*		
b. - do - 4.0 m	*		
c. - do - 6.0 m	*		
d. - do - 8.0 m	*		
iv- Body Extension 6.0 m	*		
v- Stubs			
(4 Nos. for complete tower)	*		
(b) <u>Tower Type DA1</u>			
i- Basic Body (without stubs)	*		
ii- Leg Extensions			
(4 Nos. for complete tower)			
a. - do - 2.0 m	*		
b. - do - 4.0 m	*		
c. - do - 6.0 m	*		
d. - do - 8.0 m	*		
iii- Body Extension 6.0 m	*		
iv- Stubs			
(4 Nos. for complete tower)	*		
(c) <u>Tower Type DD1</u>			
i- Basic Body (without stubs)	*		
ii- Leg Extensions			
(4 Nos. for complete tower)			
a. - do - 2.0 m	*		
b. - do - 4.0 m	*		
c. - do - 6.0 m	*		
d. - do - 8.0 m	*		
iii- Body Extension 6.0 m	*		
iv- Stubs			
(4 Nos. for complete tower)	*		

(d) <u>Tower Type TDT</u>				
i- Basic Body (without Stubs)				
ii- Leg Extensions				
(4 Nos. for complete tower)				
- do - 8.0 m				
iii- Stubs				
(4 Nos. for complete tower)				
17.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
18.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		
19.	Maximum production capacity of Steel Towers per annum	*		
20.	Maximum Capacity of galvanizing plant per annum	*		

Note:

'A'- Employers' Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer:

Signed and Stamped by Manufacturer:

Name of the Bidder:

Signed and Stamped by the Bidder:

**SPECIFIC PLANT DATA FOR
795 kcmil ACSR “DRAKE” CONDUCTOR**

Sr. No.	Information Required	'A'	'B'	'C'
A-	GENERAL			
1.	Origin of Material (Maker's Name & Address)			
2.	Origin of Conductor (Manufacturer's Name & Address)			
3.	Standard Specification Applied	ASTM B230, B232 & B498		
B-	DATA OF COMPLETE CONDUCTOR			
1.	Code Name	ACSR “Drake”		
2.	Diameter (mm)	28.14		
3.	Cross Section (mm ²)	468		
4.	D.C. Resistance at 25°C (W/km)	0.07195		
5.	Rated ultimate strength (kgs)	14288		
6.	Weight (kg/km)	1628		
7.	Lay Ratio:			
	a) Aluminum			
	i) Outermost Layer	10 to 13		
	ii) Layer immediately beneath outside layer	10 to 16		
	b) Steel			
	- Outermost 6 wire Layer	18 to 30		
8.	Direction of Lay			
	a) Aluminum			
	i) Outermost Layer	Right Hand		
	ii) Second Layer	Left Hand		
	b) Steel			
	- Outermost 6 wire Layer	Right Hand		
9.	Nominal Copper Equivalent Area (mm ²)	246		
10.	Current carrying capacity, Amps (40°C ambient, 40°C rise, 0.6 m/sec wind and 0.7 emissivity & 0.5 absorptivity factors)	840		
11.	Volume conductivity %age of IACS	61.2		
12.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
C-	DATA FOR ALUMINUM			
1.	No. of Wires	26		
2.	Diameter:			
	a) Dia. of Each wire (mm)	4.44		
	b) Dia. of Outermost Layer (mm)	28.14		
	c) Dia. of Second Layer (mm)	19.26		
3.	Total Cross-sectional area of Aluminum wires (mm ²)	402.6		
4.	Resistivity at 20°C Ω.mm ² /m	0.028172		
5.	Minimum Ultimate Tensile Strength of	16.3		

	Aluminum Strand (kg/mm ²)			
6.	Density at 20°C (kg/dm ³)	2.705		
7.	Co-efficient of linear expansion /°C	23x10 ⁻⁶		
8.	Aluminum weight (kg/km)	1116.2		
9.	Type of joints in individual wires (during stranding)	Cold Pressure Butt Welding		
10.	Distance between two consecutive joints in complete stranded conductor (m)	15		
11.	Distance over which resistance butt welding joints shall be annealed	150mm on each side of the Joint		
D- DATA FOR STEEL CORE				
1.	No. of Wires	7		
2.	Dia. of each wire (mm)	3.45		
3.	Dia. of 6 wire steel core layer (mm)	10.35		
4.	Total cross-sectional area (mm ²)	65.4		
5.	Resistivity at 20°C Ω.mm ² /m	0.19157		
6.	Ultimate tensile stress min. (kg/mm ²)	144		
7.	Stress at 1% extension min. (kg/mm ²)	126.5		
8.	Zinc coating			
	(a) Weight of Zinc coating (g/m ²)	260		
	(b) Process of Zinc coating	Hot Dip		
	(c) Minimum number of one-minute dips in copper sulphate solution	4		
9.	Chemical Requirements			
	(a) Carbon, %	0.50 – 0.85		
	(b) Manganese, %	0.50 – 1.10		
	(c) Phosphorus, % max.	0.035		
	(d) Sulfur, % max	0.045		
	(e) Silicon, %	0.10 – 0.35		
10.	Density at 20°C (kg/dm ³)	7.780		
11.	Steel core weight (kg/km)	511.95		
12.	Type of joints in base rod	Resistant butt welding		
REEL				
1.	Material and Type of Reel	Steel Frame with Wood filling		
2.	Dimensions			
	(a) Outside width (mm)	*		
	(b) Flange dia. (mm)	*		
	(c) Drum dia. (mm)	*		
	(d) Flange thickness(mm)	*		
	(e) Inside width (mm)	*		
	(f) Lagging thickness (mm)	*		
	(g) Arbor hole dia. (mm)	*		
3.	Protection on inner flanges of reel	Moisture Resistant Solid Fiber Board		
4.	Protection on two outer layers of conductor	Moisture Resistant Paper		
5.	Protective covering for overall wrapping	Moisture Resistant Solid Fiber Board		

6.	Length of Conductor on Reel (m)	3200		
7.	Preservative used for wood	Yes		
8.	Weight of Reel with Conductor (kg)	*		
9.	Weight of Reel without Conductor (kg)	*		
10.	Conductor Reels suitable for tension stringing?	Yes		
11.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		
12.	Marking of Reels as per Technical Provisions of the Bidding Documents	Yes		
13.	Maximum production capacity of the offered item per month (kilometers)	*		

Note:

'A'- Purchaser's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
OPTICAL FIBER GROUND WIRE (OPGW)**

Sr. No.	Description	'A'	'B'	'C'
A-	GENERAL			
i)	Manufacturer's Name:	_____		
ii)	Address of Manufacturing Facility	_____		
iii)	Website of Manufacturer	_____		
iv)	Contact Person of Manufacturer for this Project	_____		
v)	Email of Contact Person	_____		
vi)	Origin of Material (Makers Name & Address)	_____		
vii)	Model Number:			
	OPGW Cable,	*	_____	_____
	Optical Fiber,	*	_____	_____
viii)	Applicable Standards for:			
	OPGW Cable,	*	_____	_____
	Optical Fiber,	<u>ITU-T G.652</u>	_____	_____
	Metallic Part,	ASTM B415 & B416	_____	_____
	Tests.	IEEE Std. 1138 (2009)	_____	_____
ix)	All tests, as called in the Technical Provisions, will be carried out within the quoted cost.	<u>Yes</u>	_____	_____
x)	Type Test certificates from independent Lab.			
	Carried out,	<u>Yes</u>	_____	_____
	Carried in the year,	*	_____	_____
	Testing Agency (Name),	*	_____	_____
	Testing Station / Place,	*	_____	_____
	Country.	*	_____	_____
xi)	Manufacturer's Quality System in accordance with ISO 9000, 9001, 9002, 9003 & 9004.	<u>Yes</u>	_____	_____
	Applicable Standard.	*	_____	_____
	Certified by (Company Name).	*	_____	_____
	Certification valid till (year).	*	_____	_____

1. TECHNICAL DETAIL**1.1. OPGW CONSTRUCTION:****1.1.1. CENTRAL FIBER OPTIC UNIT:****1.1.1.1. CENTRAL METALLIC UNIT:**

Sr. No.	Description	'A'	'B'	'C'
i)	Central hollow metallic extruded tube housing the optical fiber buffer tubes.	<u>Yes</u>	_____	_____
ii)	Material of central hollow tube is Aluminium.	<u>Yes</u>	_____	_____
iii)	Minimum thickness of the central hollow metallic tube wall.	<u>1.6 to 2 mm</u>	_____	_____
iv)	Central hollow metallic tube, outer diameter, mm	<u>*</u>	_____	_____
v)	Central hollow metallic tube, inner diameter, mm	<u>*</u>	_____	_____
vi)	Number of loose buffer tubes inside the central hollow metallic extruded tube			
	(a) for 24-fiber OPGW	<u>3 to 4</u>	_____	_____
vii)	The central hollow metallic tube is filled with hydrogen absorbent gel.	<u>Yes</u>	_____	_____
viii)	The buffer tubes along with water swell-able yarns are helically stranded around a non-metallic support member (central strength member).	<u>Yes</u>	_____	_____
ix)	Material of non-metallic support member (central strength member).	<u>*</u>	_____	_____
x)	Material of Thermal Tap applied on group of plastic buffer tubes.	<u>*</u>	_____	_____

1.1.1.2. FIBER UNIT:

Sr. No.	Description	'A'	'B'	'C'
i)	Loose buffer tubes are housed in the central hollow metallic extruded tube.	<u>Yes</u>	<u> </u>	<u> </u>
ii)	Loose buffer tubes (housed in central hollow metallic tube) are made of polybutylene terephthalate.	<u>Yes</u>	<u> </u>	<u> </u>
iii)	Buffer tubes, outer diameter, mm	<u>*</u>	<u> </u>	<u> </u>
iv)	Buffer tubes, inner diameter, mm	<u>*</u>	<u> </u>	<u> </u>
v)	Optical Fibers are loosely housed in the buffer tubes.	<u>Yes</u>	<u> </u>	<u> </u>
vi)	The buffer tubes are filled with water proof and hydrogen absorbent gel.	<u>Yes</u>	<u> </u>	<u> </u>
vii)	Type of water proof jelly filled in buffer tubes.	<u>*</u>	<u> </u>	<u> </u>
viii)	Gel dripping temperature greater than 85°C.	<u>Yes</u>	<u> </u>	<u> </u>
ix)	Buffer tubes are colour coded according to EIA-598A.	<u>Yes</u>	<u> </u>	<u> </u>
x)	Total number of fibers in the OPGW (24/36/48 fibers).	<u>*</u>	<u> </u>	<u> </u>
xi)	Total number of fibers per buffer tube (maximum)			
	(a) for 24-fiber OPGW	<u>8 nos.</u>	<u> </u>	<u> </u>
xii)	Structural details of complete fiber optic unit are included.	<u>Yes</u>	<u> </u>	<u> </u>

1.1.2. STANDARD METALLIC WIRE (ARMOUR):

Sr. #	Description	'A'	'B'	'C'
i)	Armour comprises of single layer (two layers if required)	<u>Yes</u>	<u> </u>	<u> </u>
ii)	First/Inner layer of armour (standard wires) is made of aluminium class steel.	<u>ACS</u>	<u> </u>	<u> </u>

	(a) Number of strands of first layer.	*		
	(b) Diameter of individual strand wire in the first layer, mm	*		
iii)	Second/Outer layer of armour (standard wires) is made of aluminium alloy (if applicable).	*		
	(a) Number of strands in the second layer.	*		
	(b) Diameter of individual strand wire in the second layer, mm	*		
iv)	Cross-section of the metallic unit, mm ²	*		

1.1.3. OPGW CHARACTERISTIC:

Sr. #	Description	'A'	'B'	'C'
i)	Overall Diameter of OPGW, mm.	≤12		
ii)	Nominal cross-section of the OPGW (total conductor area), mm ²	*		
iii)	Maximum permissible pulling force, Kg.	*		
iv)	Ultimate breaking force, Kg	≥7000		
v)	Minimum bending radius (without fiber damage), mm	≥ 200		
vi)	Nominal DC resistance at 20°C, ohm/km.	≤0.75		
vii)	Thermally efficient rated short circuit current (Maximum 1 sec. current for temperature rise from 20 to 200 °C), kA.	≥6		
viii)	Modulus of elasticity, kg/mm ² .	*		
ix)	Coefficient of linear expansion / °C.	*		
x)	OPGW Nominal weight without grease/ with grease, Kg/Km.	≤ 460		
<u>Climatic Requirement:</u>				
i)	Operating temperature range, °C.	-20 to 80		
ii)	Storage temperature range, °C.	-20 to 85		

- iii) Installation temperature range, °C. -20 to 85 _____
- iv) Relative humidity range, % 5 to 100 _____

1.1.4. FIBER CHARACTERISTIC:

Sr. #	Description	'A'	'B'	'C'
i)	Single mode.	<u>Yes</u>	_____	_____
ii)	Material.	<u>Glass</u>	_____	_____
iii)	Wavelength, nm.	<u>1310 & 1550</u>	_____	_____
iv)	Core concentricity error, µm	<u><1</u>	_____	_____
v)	Cladding diameter, µm	<u>125 ±2</u>	_____	_____
vi)	Mode field diameter, µm (at specified wavelengths)	<u>9.2 ± 0.6 @1310 nm;</u> <u>10.4 ± 0.6 @1550 nm</u>	_____	_____
vii)	Cut-off wavelength, nm	<u><1260</u>	_____	_____
viii)	Coating diameter, µm.	<u>*</u>	_____	_____
ix)	Chromatic dispersion:			
	(a) At 1310 nm, ps/nm.km,	<u><3.5</u>	_____	_____
	(b) At 1550 nm, ps/nm.km.	<u><20</u>	_____	_____
x)	Maximum Attenuation:			
	(a) At 1310 nm, dB/km,	<u>≤0.35</u>	_____	_____
	(b) At 1550 nm, dB/km.	<u>≤0.20</u>	_____	_____
xi)	Difference in attenuation, coefficient when measured from both ends, dB.	<u>0.05</u>	_____	_____
xii)	Maximum splicing loss, dB.	<u>0.05</u>	_____	_____
xiii)	Fiber colour coded according to EIA-598A.	<u>Yes</u>	_____	_____
xiv)	Fiber reserve length, %	<u>≥0.45</u>	_____	_____
xv)	Transmission speed. Mbit/s.	<u>Up to 2488</u>	_____	_____

2. OPGW PERFORMANCE DATA

Sr. No.	Description	'A'	'B'	'C'
i)	Date of first commercial operation of the offered OPGW, dd-mm-yy.	*		
ii)	Guaranteed service life, years (min).	35		

3. SUPPORTING DOCUMENTS:

Sr. No.	Description	'A'	'B'	'C'
i)	Cable cross-section drawings enclosed & details attached.	Yes		
ii)	Reference list attached.	Yes		
iii)	Client's certificates enclosed.	Yes		
iv)	Technical literature enclosed.	Yes		
iv)	Type Test Report enclosed.	Yes		

4. PACKING SPECIFICATION

Sr. No.	Description	'A'	'B'	'C'
i)	Length of OPGW reel, m.	5000		
ii)	Tolerance of OPGW per drum for specified lengths	+2%		
iii)	Non-returnable Reel material	*		
iv)	Overall reel dimension			
	(a) Diameter, cm.	*		
	(b) Width, cm.	*		
	(c) Weight, kg.	*		
v)	Reel Spindle hole diameter, mm.	*		
vi)	Packing covering	*		

Note:

- 1) All values shall be in metric system.
- 2) Bidder has to fill-up above details to verify the Technical Data of his proposed manufacturer.
- 3) Bidder/Manufacturer shall completely fill the Schedule of Technical Data.
- 4) Detailed dimensional drawings showing type of material and other details/data etc. must be submitted with the bid.

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer:

Name of the Bidder:

Signed and Stamped by the Bidder:

SPECIFIC PLANT DATA FOR JOINT BOX

Sr. No.	Information Required	Units	Standard to be followed/Required Values	Data to be Provided by the Manufacturer
1.00	GENERAL			
1.01	Manufacturer			
1.02	Model Number			
1.03	Applicable Standards		ITU-T & IEC	
1.04	Type tests carried out		yes	
2.00	DESIGN DATA			
2.01	Material of housing			
2.02	Protection Class		IP65	
2.03	Number of cable entries		≥ 4	
2.04	Hardware and metallic parts treated with anti-corrosion element		yes	
2.05	Paint thickness	mm		
2.06	Dimensions:			
2.06.1	Width	mm		
2.06.2	Height	mm		
2.06.3	Depth	mm		
2.07	Weight	Kg		
2.08	Climatic requirements:			
2.08.1	operation temperature:			
2.08.1.1	Maximum	°C	80	
2.08.1.2	Minimum	°C	-10	
2.08.2	relative humidity:			
2.08.2.1	Maximum	%	95	
2.08.2.2	Minimum	%	5	
3.00	OTHER PERFORMANCE DATA			
3.01	Date of first commercial operation of offered Joint Box	dd-mm-yy		
3.02	Reference list attached		yes	

**4.00 SUPPORTING
DOCUMENTS**

4.01 Technical literature enclosed yes

4.02 Type test reports enclosed

Note:

- i. Bidder has to fill-up above details to verify the Technical Data of his proposed Manufacturer
- ii. All values shall be in metric system.

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
160kN PORCELAIN DISC INSULATORS**

Sr. No.	Information Required	160kN E&M Strength		
		'A'	'B'	'C'
1.	Manufacturer's Name & Address			
2.	Standard Specification Applied	NGC Technical Specifications		
3.	Type of Coupling	Ball & Socket / Tongue & Clevis		
4.	Disc Diameter (mm)	320/330		
5.	Disc Spacing (mm)	178/170		
6.	Insulator shell top surface area (mm)	*		
7.	Insulator shell Bottom surface area (mm)	*		
8.	Height of Insulator Shell (measured from base of the cap to lower most rib) (mm)	*		
9.	Dry Arcing Distance (mm)	*		
10.	Min. Creepage Distance (mm)	545		
11.	Creepage Factor	*		
12.	Profile Factor	*		
13.	Minimum Combined Electrical & Mechanical Strength (kN)	160		
14.	Pattern and sequence of failure for Electro-Mechanical Failing Load Test & Thermal Mechanical Performance Test.	*		
15.	Mech. Impact Strength (N-m)	11.5		
16.	Power Frequency Withstand Voltage	Dry, kV	90	
		Wet, kV	50	
17.	Power Frequency Flashover Voltage	Dry, kV	*	
		Wet, kV	*	
18.	Critical Impulse Withstand Voltage 1.2 x 50 μ s wave	+ive, kV	140	
		-ive, kV	140	
19.	Critical Impulse Flashover Voltage 1.2 x 50 μ s wave	+ive, kV	*	
		-ive, kV	*	
20.	Power Frequency Electric Arc Voltage	0.12s/20kA		
21.	Min. Puncture Voltage in Oil (kV)	130		
22.	Radio Influence Voltage Test voltage to ground (kV) Max. RIV at 1000 kHz / μ V	10		
		50		
		*		
23.	Net Weight (kg.)	*		
24.	Material	Shell	Porcelain	
		Cap	Malleable Cast Iron	
		Pin	Forged Steel with 99.95% pure zinc sleeve	
25.	Standard & Size of Insulator Coupling	IEC 60120, Size 20 / IEC 60471 19C		
26.	Standard & Material of Locking Device	IEC 60120/ IEC 60305, IEC 60372		

27.	Type of galvanizing	Hot Dip Galvanization	_____	_____
-	Galvanizing for Cap, g/m ²	800	_____	_____
-	Galvanizing for Pin, g/m ²	800	_____	_____
28.	Manufacturer's Catalogue No. of offered Insulators	*	_____	_____
29.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes	_____	_____
30.	Type Test Reports of following tests submitted with the Bid for offered insulators (Yes/No)			
-	Thermal Mechanical Performance Test	*	_____	_____
-	Power Arc Test	*	_____	_____
-	Steep Wave Test	*	_____	_____
-	Artificial Pollution Performance Test	*	_____	_____
31.	Whether Drawing of Insulator submitted	Yes	_____	_____
32.	Color of Porcelain Shell	Light Grey	_____	_____
33.	No. of Anti-Fog Type Insulators with zinc sleeve supplied in past 10 years			
-	Domestic		_____	_____
-	Abroad		_____	_____
34.	Packing Provisions	As per Clause SI-10 of Employer's Requirements	_____	_____
35.	Maximum Production Capacity of 160kN or higher similar Anti-Fog Type Insulators per month (Nos.)	*	_____	_____

Note:

- 'A'- Employer's Specified Data/Parameters
 'B'- Bidder's Proposed Data/Parameters
 'C'- Remarks Supporting the Proposed Deviation in Column 'B'
 (*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
80kN PORCELAIN DISC INSULATORS**

Sr. No.	Information Required	80kN E&M Strength		
		'A'	'B'	'C'
1.	Manufacturer's Name & Address			
2.	Standard Specification Applied	NGC Technical Specifications		
3.	Type of Coupling	Ball & Socket / Tongue & Clevis		
4.	Disc Diameter (mm)	280		
5.	Disc Spacing (mm)	146		
6.	Insulator shell top surface area (mm)	*		
7.	Insulator shell Bottom surface area (mm)	*		
8.	Height of Insulator Shell (measured from base of the cap to lower most rib) (mm)	*		
9.	Dry Arcing Distance (mm)	*		
10.	Min. Creepage Distance (mm)	440		
11.	Creepage Factor	*		
12.	Profile Factor	*		
13.	Minimum Combined Electrical & Mechanical Strength (kN)	80		
14.	Pattern and sequence of failure for Electro-Mechanical Failing Load Test & Thermal Mechanical Performance Test.	*		
15.	Mech. Impact Strength (N-m)	11.5		
16.	Power Frequency Withstand Voltage	Dry, kV Wet, kV	85 45	
17.	Power Frequency Flashover Voltage	Dry, kV Wet, kV	* *	
18.	Critical Impulse Withstand Voltage 1.2 x 50 μ s wave	+ive, kV -ive, kV	125 130	
19.	Critical Impulse Flashover Voltage 1.2 x 50 μ s wave	+ive, kV -ive, kV	* *	
20.	Power Frequency Electric Arc Voltage	0.12s/20kA		
21.	Min. Puncture Voltage in Oil (kV)	130		
22.	Radio Influence Voltage	Test voltage to ground (kV) Max. RIV at 1000 kHz / μ V	10 50	
23.	Net Weight (kg.)	*		
24.	Material	Shell Cap Pin	Porcelain Malleable Cast Iron Forged Steel with 99.95% pure zinc sleeve	
25.	Standard & Size of Insulator Coupling	IEC 60120, Size 16 / IEC 60471 16C		

26. Standard & Material of Locking Device	IEC 60120 / IEC 60305, IEC 60372		
27. Type of galvanizing	Hot Dip Galvanization		
- Galvanizing for Cap, g/m ²	800		
- Galvanizing for Pin, g/m ²	800		
28. Manufacturer's Catalogue No. of offered Insulators	*		
29. All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
30. Type Test Reports of following tests submitted with the Bid for offered insulators (Yes/No)			
- Thermal Mechanical Performance Test	*		
- Power Arc Test	*		
- Steep Wave Test	*		
- Artificial Pollution Performance Test	*		
31. Whether Drawing of Insulator submitted	Yes		
32. Color of Porcelain Shell	Brown		
33. No. of Anti-Fog Type Insulators with zinc sleeve supplied in past 10 years			
- Domestic			
- Abroad			
34. Packing Provisions	As per Clause SI-10 of Employer's Requirements		
35. Maximum Production Capacity of 80kN or higher similar Anti-Fog Type Insulators per month (Nos.)	*		

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer:

Signed and Stamped by Manufacturer:

Name of the Bidder:

Signed and Stamped by the Bidder:

**SPECIFIC PLANT DATA FOR
160kN GLASS DISC INSULATORS**

Sr. No.	Information Required	160kN E&M Strength		
		'A'	'B'	'C'
1.	Manufacturer's Name & Address			
2.	Standard Specification Applied	NGC Technical Specifications		
3.	Type of Coupling	Ball & Socket / Tongue & Clevis		
4.	Disc Diameter (mm)	320/330		
5.	Disc Spacing (mm)	178/170		
6.	Insulator shell top surface area (mm)	*		
7.	Insulator shell Bottom surface area (mm)	*		
8.	Height of Insulator Shell (measured from base of the cap to lower most rib) (mm)	*		
9.	Dry Arcing Distance (mm)	*		
10.	Min. Creepage Distance (mm)	545		
11.	Creepage Factor	*		
12.	Profile Factor	*		
13.	Minimum Combined Electrical & Mechanical Strength (kN)	160		
14.	Pattern and sequence of failure for Electro-Mechanical Failing Load Test & Thermal Mechanical Performance Test.	*		
15.	Mech. Impact Strength (N-m)	11.5		
16.	Power Frequency Withstand Voltage	Dry, kV	90	
		Wet, kV	50	
17.	Power Frequency Flashover Voltage	Dry, kV	*	
		Wet, kV	*	
18.	Critical Impulse Withstand Voltage 1.2 x 50 μ s wave	+ive, kV	140	
		-ive, kV	140	
19.	Critical Impulse Flashover Voltage 1.2 x 50 μ s wave	+ive, kV	*	
		-ive, kV	*	
20.	Power Frequency Electric Arc Voltage	0.12s/20kA		
21.	Min. Puncture Voltage in Oil (kV)	130		
22.	Radio Influence Voltage Test voltage to ground (kV) Max. RIV at 1000 kHz / μ V			
		10		
		50		
23.	Net Weight (kg.)	*		
24.	Material			
	Shell	Toughened Glass		
	Cap	Malleable Cast Iron		
	Pin	Forged Steel with 99.95% pure zinc sleeve		

25. Standard & Size of Insulator Coupling	IEC 60120, Size 20 / IEC 60471 19C		
26. Standard & Material of Locking Device	IEC 60120 / IEC 60305, IEC 60372		
27. Type of galvanizing	Hot Dip Galvanization		
- Galvanizing for Cap, g/m ²	800		
- Galvanizing for Pin, g/m ²	800		
28. Manufacturer's Catalogue No. of offered Insulators	*		
29. All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
30. Type Test Reports of following tests submitted with the Bid for offered insulators (Yes/No)			
- Thermal Mechanical Performance Test	*		
- Power Arc Test	*		
- Steep Wave Test	*		
- Artificial Pollution Performance Test	*		
31. Whether Drawing of Insulator submitted	Yes		
32. No. of Anti-Fog Type Insulators with zinc sleeve supplied in past 10 years			
- Domestic			
- Abroad			
33. Packing Provisions	As per Clause SI-10 of Employer's Requirements		
34. Maximum Production Capacity of 160kN or higher similar Anti-Fog Type Insulators per month (Nos.)	*		

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

SPECIFIC PLANT DATA FOR 80kN GLASS DISC INSULATORS

Sr. No.	Information Required	80kN E&M Strength		
		'A'	'B'	'C'
1.	Manufacturer's Name & Address			
2.	Standard Specification Applied	NGC Technical Specifications		
3.	Type of Coupling	Ball & Socket / Tongue & Clevis		
4.	Disc Diameter (mm)	280		
5.	Disc Spacing (mm)	146		
6.	Insulator shell top surface area (mm)	*		
7.	Insulator shell Bottom surface area (mm)	*		
8.	Height of Insulator Shell (measured from base of the cap to lower most rib) (mm)	*		
9.	Dry Arcing Distance (mm)	*		
10.	Min. Creepage Distance (mm)	440		
11.	Creepage Factor	*		
12.	Profile Factor	*		
13.	Minimum Combined Electrical & Mechanical Strength (kN)	80		
14.	Pattern and sequence of failure for Electro-Mechanical Failing Load Test & Thermal Mechanical Performance Test.	*		
15.	Mech. Impact Strength (N-m)	11.5		
16.	Power Frequency Withstand Voltage	Dry, kV Wet, kV	85 45	
17.	Power Frequency Flashover Voltage	Dry, kV Wet, kV	* *	
18.	Critical Impulse Withstand Voltage 1.2 x 50 μ s wave	+ive, kV -ive, kV	125 130	
19.	Critical Impulse Flashover Voltage 1.2 x 50 μ s wave	+ive, kV -ive, kV	* *	
20.	Power Frequency Electric Arc Voltage	0.12s/20kA		
21.	Min. Puncture Voltage in Oil (kV)	130		
22.	Radio Influence Voltage	Test voltage to ground (kV) Max. RIV at 1000 kHz / μ V	10 50	
23.	Net Weight (kg.)	*		
24.	Material	Shell Cap Pin	Toughened Glass Malleable Cast Iron Forged Steel with 99.95% pure zinc sleeve	
25.	Standard & Size of Insulator Coupling	IEC 60120, Size 16 / IEC 60471 16C		
26.	Standard & Material of Locking Device	IEC 60120 / IEC 60305, IEC 60372		
27.	Type of galvanizing for	Hot Dip Galvanization		

-	Galvanizing for Cap, g/m ²	800		
-	Galvanizing for Pin, g/m ²	800		
28.	Manufacturer's Catalogue No. of offered Insulators	*		
29.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
30.	Type Test Reports of following tests submitted with the Bid for offered insulators (Yes/No)			
-	Thermal Mechanical Performance Test	*		
-	Power Arc Test	*		
-	Steep Wave Test	*		
-	Artificial Pollution Performance Test	*		
31.	Whether Drawing of Insulator submitted	Yes		
32.	No. of Anti-Fog Type Insulators with zinc sleeve supplied in past 10 years			
-	Domestic			
-	Abroad			
33.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		
34.	Maximum Production Capacity of 80kN or higher similar Anti-Fog Type Insulators per month (Nos.)	*		

Note:

- 'A'- Employer's Specified Data/Parameters
 'B'- Bidder's Proposed Data/Parameters
 'C'- Remarks Supporting the Proposed Deviation in Column 'B'
 (*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
HARDWARE FOR CONDUCTOR AND OPGW**

Sr. No.	Information Required	'A'	'B'	'C'
1.	Origin of Material (Maker's Name & Address)			
2.	Origin of Hardware (Manufacturer's Name & Address)			
3.	Standard Specification Applied	IEC 61284		
4.	Conductor Suspension Clamp			
a)	Vertical Load Withstand Capability, kg	12000		
b)	Slippage Load (min), kg	1400		
c)	Slippage Load (max), kg	1900		
5.	OPGW Suspension Clamp			
a)	Vertical Load Withstand Capability, kg	8000		
b)	Slippage Load (min), kg	1000		
c)	Slippage Load (max), kg	1300		
6.	OPGW Tension Clamp			
-	Slippage Load (min), kg	95% of UTS of OPGW		
7.	Material of Conductor Suspension Clamp compatible with the Conductor Material	Yes		
8.	Whether Conductor Hardware assemblies are equipped with suitable corona control and power arc protection devices	Yes		
9.	Whether hardware be corona free during operation	Yes		
10.	Whether E-field modeling data and its report for conductor hardware strings is submitted	Yes		
11.	Corona Extinction Voltage Level for conductor hardware strings, kV rms (L-G)	346		
12.	Galvanizing			
a)	Type of Galvanizing	Hot Dip		
b)	Min. Zinc Coating Thickness (μm)	86		
13.	Whether conductor hardware strings are suitable for hot-line maintenance	Yes		
14.	Whether conductor hardware is suitable for short circuit current of 63kA for 1 sec	Yes		
15.	Whether hardware strings and its components are compliant with the articulation requirements of the Technical Provisions	Yes		
16.	Material of Cotter Pin for hardware	Stainless Steel		
17.	Whether marking of hardware strings and components is according to the Technical Provisions	Yes		
18.	Whether detailed drawings including isometric views of hardware strings of conductor and OPGW are submitted	Yes		
19.	All tests, as called for in the Technical	Yes		

	Provisions, will be carried out within the quoted cost	As per Clause SI-10 of Employer's Requirements		
20.	Packing Provisions			

Note:

- 'A'- Employer's Specified Data/Parameters
- 'B'- Bidder's Proposed Data/Parameters
- 'C'- Remarks Supporting the Proposed Deviation in Column 'B'
- (*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
COMPLETE HARDWARE STRINGS INCLUDING INSULATORS
(FOR ACSR DRAKE CONDUCTOR)**

Sr. No.	Information Required	'A'	'B'	'C'
1.	Power frequency withstand voltage of string with arcing horns, corona control rings/grading rings under wet condition kV(rms)	As per IEC 60071	_____	_____
2.	Switching surge withstand voltage (wet)	As per IEC 60071	_____	_____
a)	Positive, kV(peak)	As per IEC 60071	_____	_____
b)	Negative, kV(peak)	As per IEC 60071	_____	_____
3.	Lightning Impulse withstand voltage (dry)	As per IEC 60071	_____	_____
a)	Positive, kV(peak)	As per IEC 60071	_____	_____
b)	Negative, kV(peak)	As per IEC 60071	_____	_____
4.	Min. Impulse flashover voltage (dry) as per IEC-60060-1		_____	_____
a)	Positive, kV(peak)	*	_____	_____
b)	Negative, kV(peak)	*	_____	_____
5.	Minimum Corona extinction voltage under dry condition kV(rms)	346	_____	_____
6.	RIV at 0.5MHz when the string is energized at 346kV (rms) under dry Condition (µV)	60dB	_____	_____
7.	Max. Voltage across any individual insulator in complete insulator assembly (%)	*% for suspension *% for tension	_____	_____
8.	Method/Test for verification of max. voltage across any individual insulator in complete insulator assembly	*	_____	_____
9.	Whether drawing of hardware assembly's attachment with the tower showing dimensions and isometric views submitted	Yes	_____	_____

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
COMPRESSION TYPE DEAD END
(FOR ACSR DRAKE CONDUCTOR)**

Sr. No.	Information Required	'A'	'B'	'C'
A-	GENERAL			
1.	Origin of Material (Maker's Name & Address)			
2.	Origin of Compression Dead End Body (Manufacturer's Name & Address)			
3.	Standard Specification Applied	IEC 61284		
4.	Failing Load, kg	*		
5.	Slipping Load, kg	95% of UTS of Conductor		
B-	Steel Compression Dead End			
a)	Inner Dia, mm	*		
b)	Outer Dia, mm	*		
c)	Length before compression, mm	*		
d)	Length after compression, mm	*		
e)	Diameter after compression, mm	*		
f)	Percentage Elongation	*		
g)	Die Size	*		
h)	Weight, kg	*		
C-	Aluminum Alloy Compression Dead End			
a)	Inner Dia, mm	*		
b)	Outer Dia, mm	*		
c)	Length before compression, mm	*		
d)	Length after compression, mm	*		
e)	Diameter after compression, mm	*		
f)	Percentage Elongation	*		
g)	Die Size	*		
h)	Weight, kg	*		
D-	Jumper Terminal			
a)	No. of Bolts	4		
b)	Material of Bolts, Nuts	Al. Alloy / St. Steel		
c)	Material of Spring Washers	Al. Alloy / St. Steel		
d)	Material of Plain Washers	Al. Alloy / St. Steel		
e)	Material of Belleville Washers	Al. Alloy / St. Steel		
f)	Weight, kg	*		
6.	Corona extinction voltage, kV rms (L-G)	346		
7.	Whether the result of Heat Cycle test is provided with the Bid	Yes		
8.	Whether the tension Clamps are factory pre-filled with appropriate filler compound	Yes		
9.	Quantity of additional filler compound to be supplied	5% of the total quantity		
10.	Protection of open mouths of accessories against moisture and dust is ensured with	Plastic/Rubber Cap		
11.	Galvanizing of ferrous material			

a)	Type of Galvanizing	Hot Dip	_____	_____
b)	Min. Zinc Coating Thickness (µm)	86	_____	_____
12.	Whether hardware is suitable for hot-line maintenance	Yes	_____	_____
13.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes	_____	_____
14.	Whether drawing of Conductor dead end Joint including its isometric view submitted	Yes	_____	_____
15.	Whether marking of compression dead end body and its components is according to the Technical Provisions	Yes	_____	_____
16.	Whether adequate quantity of Electrical Joint Compound Supplied with Compression Dead End Bodies	Yes	_____	_____
17.	Whether the supplied Electrical Joint Compound is in compliance with the Technical Provisions	Yes	_____	_____
18.	Packing Provisions	As per Clause SI-10 of Employer's Requirements	_____	_____

Note:

- 'A'- Employer's Specified Data/Parameters
 'B'- Bidder's Proposed Data/Parameters
 'C'- Remarks Supporting the Proposed Deviation in Column 'B'
 (*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____
 Signed and Stamped by Manufacturer: _____
 Name of the Bidder: _____
 Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
MID-SPAN JOINT / COMPRESSION SPLICE
(FOR ACSR DRAKE CONDUCTOR)**

Sr. No.	Information Required	'A'	'B'	'C'
A-	GENERAL			
10.	Origin of Material (Maker's Name & Address)			
11.	Origin of Compression Splice (Manufacturer's Name & Address)			
12.	Standard Specification Applied	IEC 61284		
13.	Failing Load, kg	*		
14.	Slipping Load, kg	95% of UTS of Conductor		
B-	Steel Sleeve			
a)	Inner Dia, mm	*		
b)	Outer Dia, mm	*		
c)	Length before compression, mm	*		
d)	Length after compression, mm	*		
e)	Diameter after compression, mm	*		
f)	Percentage Elongation	*		
g)	Die Size	*		
h)	Weight, kg	*		
C-	Aluminum Alloy Sleeve			
a)	Inner Dia, mm	*		
b)	Outer Dia, mm	*		
c)	Length before compression, mm	*		
d)	Length after compression, mm	*		
e)	Diameter after compression, mm	*		
f)	Percentage Elongation	*		
g)	Die Size	*		
h)	Weight, kg	*		
15.	Corona extinction voltage, kV rms (L-G)	346		
16.	Whether the result of Heat Cycle test is provided with the Bid	Yes		
17.	Whether the accessories are factory pre-filled with appropriate filler compound	Yes		
18.	Quantity of additional filler compound to be supplied	5% of the total quantity		
19.	Protection of open mouths of accessories against moisture and dust is ensured with	Plastic/Rubber Cap		
20.	Galvanizing of ferrous material			
c)	Type of Galvanizing	Hot Dip		
d)	Min. Zinc Coating Thickness (µm)	86		
21.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
22.	Whether drawing of Mid-Span Joint including its isometric view submitted	Yes		
23.	Whether marking of Mid-Span Joint is	Yes		

according to the Technical Provisions
24. Packing Provisions

As per Clause SI-10 of
Employer's
Requirements

Note:

- 'A'- Employer's Specified Data/Parameters
- 'B'- Bidder's Proposed Data/Parameters
- 'C'- Remarks Supporting the Proposed Deviation in Column 'B'
- (*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer:

--

Signed and Stamped by Manufacturer:

--

Name of the Bidder:

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Signed and Stamped by the Bidder:

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**SPECIFIC PLANT DATA FOR
REPAIR SLEEVE
(FOR ACSR DRAKE CONDUCTOR)**

Sr. No.	Information Required	'A'	'B'	'C'
1.	Origin of Material (Maker's Name & Address)			
2.	Origin of Repair Sleeve (Manufacturer's Name & Address)			
3.	Standard Specification Applied	IEC 61284		
4.	Inner Dia, mm	*		
5.	Outer Dia, mm	*		
6.	Length before compression, mm	*		
7.	Length after compression, mm	*		
8.	Diameter after compression, mm	*		
9.	Percentage Elongation	*		
10.	Die Size	*		
11.	Weight, kg	*		
12.	Material	Al. Alloy		
13.	Failing Load, kg	95% of UTS of Conductor		
14.	Corona extinction voltage, kV rms (L-G)	346		
15.	Whether the result of Heat Cycle test is provided with the Bid	Yes		
16.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
17.	Whether drawing of Repair Sleeve Joint including its isometric view submitted	Yes		
18.	Whether marking of Repair Sleeve is according to the Technical Provisions	Yes		
19.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

SPECIFIC PLANT DATA FOR HYDRAULIC COMPRESSORS & DIES

Sr. No.	Information Required	'A'	'B'	'C'
A-	100 Ton Hydraulic Compressor			
1.	Origin of Compressor (Manufacturer's Name & Address)			
2.	Type of Engine	Gasoline		
3.	Nominal compressor thrust, tons	100		
4.	Pressure at which the above stated thrust will be developed, kg/cm ²	700		
5.	Length of hose pipe, meter	10		
6.	Pressure gauge and other necessary adaptors fitted with the compressor	Yes		
7.	Dial range of pressure gauge, kg/cm ²	0-1000		
8.	Fuel capacity of the tank of Engine, liters	*		
9.	Total weight of compressor, kg	*		
10.	Total weight of Engine, kg	*		
11.	Working temperature range, °C	-10°C to 55°C		
12.	Portable working capability (Yes/No)	*		
13.	Compressor suitable for hot-line maintenance work	Yes		
14.	Remote control operation	Yes		
15.	Ground stand and steel carrying case supplied with the Compressor	Yes		
16.	Product catalogue and drawing submitted	Yes		
17.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer:

Signed and Stamped by Manufacturer:

Name of the Bidder:

Signed and Stamped by the Bidder:

SPECIFIC PLANT DATA FOR HYDRAULIC COMPRESSORS & DIES

Sr. No.	Information Required	'A'	'B'	'C'
B-	60 Ton Hydraulic Compressor			
1.	Origin of Compressor (Manufacturer's Name & Address)			
2.	Type of Engine	Gasoline		
3.	Nominal compressor thrust, tons	60		
4.	Pressure at which the above stated thrust will be developed, kg/cm ²	700		
5.	Length of hose pipe, meter	10		
6.	Pressure gauge and other necessary adaptors fitted with the compressor	Yes		
7.	Dial range of pressure gauge, kg/cm ²	0-1000		
8.	Fuel capacity of the tank of Engine, liters	*		
9.	Total weight of compressor, kg	*		
10.	Total weight of Engine, kg	*		
11.	Working temperature range, °C	-10°C to 55°C		
12.	Portable working capability (Yes/No)	Yes		
13.	Compressor suitable for hot-line maintenance work	Yes		
14.	Remote control operation	Yes		
15.	Ground stand and steel carrying case supplied with the Compressor	Yes		
16.	Product catalogue and drawing submitted	Yes		
17.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer:

Signed and Stamped by Manufacturer:

Name of the Bidder:

Signed and Stamped by the Bidder:

SPECIFIC PLANT DATA FOR HYDRAULIC COMPRESSORS & DIES

Sr. No.	Information Required	'A'	'B'	'C'
C-	Compression Dies			
1.	Origin of Dies (Manufacturer's Name & Address)			
2.	One die size required for all conductor accessories	Yes		
3.	Dies Sizes for ACSR Drake Conductor			
a-	Compression Dead End Body			
-	For Aluminum Alloy Part	*		
-	For Steel Part	*		
b-	Compression Splice/Mid-span Joint			
-	For Aluminum Alloy Part	*		
-	For Steel Part	*		
c-	Repair Sleeve			
-	For Aluminum Alloy Part	*		
4.	Whether the Dies for Conductor are compatible with compressor and conductor accessories (indicate separately type of Compressor and corresponding die)	Yes		
5.	Product catalogue and drawing submitted	Yes		
6.	Whether marking of Dies is according to the Technical Provisions	Yes		
7.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
SPACER DAMPERS
(FOR ACSR DRAKE CONDUCTOR)**

Sr. No.	Information Required	'A'	'B'	'C'
1.	Manufacturer's Name & Address			
2.	Standard Specification Applied	IEC 61854		
3.	Corona extinction voltage, kV rms (L-G)	346		
4.	Type of damping material	Elastomer		
5.	Dynamic strain caused by vibration at suspension point in vertical direction, micro-strain peak-to-peak	200		
6.	Maximum permissible sub-span oscillation amplitude peak to peak (mm)	130		
7.	Electro-magnetic strength against short circuit current of 63,000 Amps, rms symmetrical for 4 cycles (50 Hz)	1675 kg		
8.	Spacer Dampers equipped with Break-away head type bolts	Yes		
9.	Design installation torque for Break-away head bolts with % tolerance, kg-m	*		
10.	Material & size of Breakaway type Bolts	M16 Al. Alloy / M12 St. Steel		
11.	Material of Breakaway head/caps	*		
12.	Electrical Resistance between two adjacent Clamps (Ω)	*		
13.	Specify temperature withstand capability of elastomer or other non-metallic materials used	-10°C to +100°C		
14.	Weight of spacer damper, kg	*		
15.	No. of vibration recorders to be used for field vibration study	Two		
16.	Information regarding locations of spacer damper for various span lengths submitted	Yes		
17.	No. of spacer dampers required for ACSR "Drake" Conductor for the following span lengths:			
	0 - 100m	*		
	101 - 150m	*		
	151 - 200m	*		
	201 - 250m	*		
	251 - 300m	*		
	301 - 350m	*		
	351 - 400m	*		
	401 - 450m	*		
	451 - 500m	*		
	501 - 550m	*		
	551 - 600m	*		
	601 - 650m	*		
	651 - 700m	*		

	701 - 750m	*		
	751 - 800m	*		
	801 - 850m	*		
	851 - 900m	*		
	901 - 950m	*		
	951 - 1000m	*		
18.	Whether analytical vibration damping study and respective data is submitted	Yes		
19.	Software used to perform analytical vibration damping study of the proposed damping system	*		
20.	Whether damping material's characteristics submitted	Yes		
21.	Whether installation instructions submitted	Yes		
22.	Whether Spacer Damper is suitable for hot-line maintenance	Yes		
23.	Whether Spacer Damper hot-line maintenance procedure submitted	Yes		
24.	Whether Spacer Damper is capable of being removed and re-installed without any damage to conductor	Yes		
25.	Whether spacer damper removal and re-installation procedure submitted	Yes		
26.	Whether the material of Breakaway bolt is resistant to galvanic corrosion due to its possible bimetallic action with damper's clamp	Yes		
27.	Whether marking of Spacer Damper is according to the Technical Provisions	Yes		
28.	Whether the proposed damping system is in compliant with Performance Requirements of the Technical Provisions	Yes		
29.	Whether spacer damper drawing submitted	Yes		
30.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
31.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		

Note:

- 'A'- Employer's Specified Data/Parameters
 'B'- Bidder's Proposed Data/Parameters
 'C'- Remarks Supporting the Proposed Deviation in Column 'B'
 (*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
STOCKBRIDGE VIBRATION DAMPERS
(FOR ACSR DRAKE CONDUCTOR)**

Sr. No.	Information Required	'A'	'B'	'C'
1.	Manufacturer's Name & Address			
2.	Standard Specification Applied	IEC 61897		
3.	Vibration Dampers' design criteria (resonance frequencies)	4R		
4.	Corona extinction voltage, kV rms (L-G)	346		
5.	Dynamic strain caused by vibration at suspension point in vertical direction, micro-strain peak-to-peak	200		
6.	Vibration Dampers equipped with Break-away head type bolts	Yes		
7.	Design installation torque for Break-away head bolts with % tolerance, kg-m	*		
8.	Material & size of Breakaway type Bolts	*		
9.	Material of Breakaway head/caps	*		
10.	Weight of Stockbridge vibration damper, kg	*		
11.	Weight of damper weights, kg	*		
12.	Material of damper weights	*		
13.	Material of Clamp	*		
14.	Material of Plain & Belleville washers	*		
15.	Messenger Wire			
	a- No. of Strands, min	19		
	b- Material	St. Steel		
16.	No. of vibration recorders to be used for field vibration study	One		
17.	Information regarding locations of vibration dampers for various span lengths submitted	Yes		
18.	No. of vibration dampers required for Aluminum Clad Shield Wire for the following span lengths:			
	0 - 100m	*		
	101 - 200m	*		
	201 - 300m	*		
	301 - 400m	*		
	401 - 500m	*		
	501 - 600m	*		
	601 - 700m	*		
	701 - 800m	*		
	801 - 900m	*		
	901 - 1000m	*		
19.	Whether analytical vibration damping study and respective data is submitted	Yes		
20.	Software used to perform analytical vibration damping study of the proposed damping system	*		

21. Whether installation instructions submitted	Yes	_____	_____
22. Whether vibration damper is capable of being removed and re-installed without any damage to shield wire	Yes	_____	_____
23. Whether vibration damper removal and re-installation procedure submitted	Yes	_____	_____
24. Whether marking of vibration damper is according to the Technical Provisions	Yes	_____	_____
25. Whether the proposed damping system is in compliant with Performance Requirements of the Technical Provisions	Yes	_____	_____
26. Whether vibration damper drawing submitted	Yes	_____	_____
27. Whether the design of vibration damper is resistant to water and moisture accumulation anywhere on it.	Yes	_____	_____
28. Whether the material of Breakaway bolt is resistant to galvanic corrosion due to its possible bimetallic action with damper's clamp	Yes	_____	_____
29. All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes	_____	_____
30. Packing Provisions	As per Clause SI-10 of Employer's Requirements	_____	_____

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
STOCKBRIDGE VIBRATION DAMPERS
(FOR OPGW)**

Sr. No.	Information Required	'A'	'B'	'C'
1.	Manufacturer's Name & Address			
2.	Standard Specification Applied	IEC 61897		
3.	Vibration Dampers' design criteria (resonance frequencies)	4R		
4.	Dynamic strain caused by vibration at suspension point in vertical direction, micro-strain peak-to-peak	200		
5.	Vibration Dampers equipped with Break-away head type bolts	Yes		
6.	Design installation torque for Break-away head bolts with % tolerance, kg-m	*		
7.	Material & size of Breakaway type Bolts	*		
8.	Material of Breakaway head/caps	*		
9.	Weight of Stockbridge vibration damper, kg	*		
10.	Weight of damper weights, kg	*		
11.	Material of damper weights	*		
12.	Material of Clamp	*		
13.	Material of Plain & Belleville washers	*		
14.	Messenger Wire			
	a- No. of Strands, min	19		
	b- Material	St. Steel		
15.	No. of vibration recorders to be used for field vibration study	One		
16.	Information regarding locations of vibration dampers for various span lengths submitted	Yes		
17.	No. of vibration dampers required for OPGW for the following span lengths:			
	0 - 100m	*		
	101 - 200m	*		
	201 - 300m	*		
	301 - 400m	*		
	401 - 500m	*		
	501 - 600m	*		
	601 - 700m	*		
	701 - 800m	*		
	801 - 900m	*		
	901 - 1000m	*		
18.	Whether analytical vibration damping study and respective data is submitted	Yes		
19.	Software used to perform analytical vibration damping study of the proposed damping system	*		
20.	Whether installation instructions submitted	Yes		
21.	Whether vibration damper is capable of	Yes		

	being removed and re-installed without any damage to OPGW			
22.	Whether vibration damper removal and re-installation procedure submitted	Yes		
23.	Whether marking of vibration damper is according to the Technical Provisions	Yes		
24.	Whether the proposed damping system is in compliant with Performance Requirements of the Technical Provisions	Yes		
25.	Whether vibration damper drawing submitted	Yes		
26.	Whether the design of vibration damper is resistant to water and moisture accumulation anywhere on it.	Yes		
27.	Whether the material of Breakaway bolt is resistant to galvanic corrosion due to its possible bimetallic action with damper's clamp	Yes		
28.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
29.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		

Note:

- 'A'- Employer's Specified Data/Parameters
 'B'- Bidder's Proposed Data/Parameters
 'C'- Remarks Supporting the Proposed Deviation in Column 'B'
 (*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

**SPECIFIC PLANT DATA FOR
SPACERS
(FOR ACSR DRAKE CONDUCTOR)**

Sr. No.	Information Required	'A'	'B'	'C'
1.	Manufacturer's Name & Address			
2.	Standard Specification Applied	*		
3.	Corona extinction voltage, kV rms (L-G)	346		
4.	Electro-magnetic strength against short circuit current of 63,000 Amps, rms symmetrical for 4 cycles (50 Hz)	1675 kg		
5.	Spacer equipped with Break-away head type bolts	Yes		
6.	Design installation torque for Break-away head bolts with % tolerance, kg-m	*		
7.	Material & size of Breakaway type Bolts	M16 Al. Alloy / M12 St. Steel		
8.	Material of Breakaway head/caps	*		
9.	Weight of spacer, kg	*		
10.	Information regarding locations of spacer for various Jumper lengths submitted	Yes		
11.	Whether installation instructions submitted	Yes		
12.	Whether Spacer is suitable for hot-line maintenance	Yes		
13.	Whether Spacer hot-line maintenance procedure submitted	Yes		
14.	Whether Spacer is capable of being removed and re-installed without any damage to conductor	Yes		
15.	Whether spacer removal and re-installation procedure submitted	Yes		
16.	Whether the material of Breakaway bolt is resistant to galvanic corrosion due to its possible bimetallic action with spacer's clamp	Yes		
17.	Whether marking of Spacer is according to the Technical Provisions	Yes		
18.	Whether spacer drawing submitted	Yes		
19.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	Yes		
20.	Packing Provisions	As per Clause SI-10 of Employer's Requirements		

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

(*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____

SPECIFIC PLANT DATA FOR GROUNDING MATERIAL

Sr. No.	Description	'A'	'B'	'C'
1.	Manufacturer's name & address	_____		
2.	Copper-weld/Copper-covered Ground Rod			
i)	Origin of material (Maker's Name and Address)	_____	_____	_____
ii)	Standard Specification applied	ANSI/UL 467 <u>Standards</u>	_____	_____
iii)	Tensile strength, kg/mm ²	<u>41-56</u>	_____	_____
iv)	Yield strength (min), kg/mm ²	<u>25</u>	_____	_____
v)	Elongation, %	20% in 200mm <u>Gauge length</u>	_____	_____
vi)	Method used to cover steel by copper			
	- Molten Welding	<u>*</u>	_____	_____
	- Copper bonded (electro deposited)	<u>*</u>	_____	_____
vii)	Dia. of rod, mm	<u>16</u>	_____	_____
viii)	Length of Rod, m	<u>3</u>	_____	_____
ix)	Thickness of Copper			
	- Copper Weld, mm	<u>0.38</u>	_____	_____
	- Copper Cover, mm	<u>0.45</u>	_____	_____
x)	Packing			
	a) No. of rods in each box	<u>*</u>	_____	_____
	b) Net weight, kg	<u>*</u>	_____	_____
	c) Gross weight, kg	<u>*</u>	_____	_____
3.	Grounding connectors			
i)	Standard Specification applied	ANSI/UL 467 <u>Standards</u>	_____	_____

Sr. No.	Description	‘A’	‘B’	‘C’
ii)	Material used			
	a) Flat to cable connector	Hot dipped galvanized steel	_____	_____
	b) Cable to rod connector	Bronze or high strength copper alloy	_____	_____
iii)	Tightening torque (withstand without damage)	*	_____	_____
iv)	Size of screw of flat to cable connector	M16	_____	_____
v)	Whether drawing of grounding connector submitted	Yes	_____	_____
vi)	Packing			
	a) No. of connectors in each box	*	_____	_____
	b) Net weight, kg	*	_____	_____
	c) Gross weight, kg	*	_____	_____
4.	Copper-covered/Copper-weld stranded ground wire			
i)	Origin of material (Maker's Name and Address)	_____	_____	_____
ii)	Standard Provisions applied	ASTM B227/B228	_____	_____
iii)	No. of strands	07	_____	_____
iv)	Dia. of each strand, mm	2.59	_____	_____
vi)	Dia. of complete wire, mm	7.77	_____	_____
vii)	%age conductivity	40	_____	_____
viii)	Packing			
	a) Length of wire in each reel, m	2000	_____	_____
	b) Net weight, kg	*	_____	_____
	c) Gross weight, kg	*	_____	_____

**SPECIFIC PLANT/GOODS DATA FOR
RTV SILICONE RUBBER INSULATOR COATING**

Sr. No.	Description	'A'	'B'	'C'
1.	(i) Manufacturer's Name & Address:	_____		
	(ii) Applicator's Name & Address:	_____		
2.	Standards Followed	_____		
RATINGS:				
3.	Method of application	Dip / Spray	_____	_____
4.	Use of Primer for adhesion	Forbidden	_____	_____
5.	Type of Coating	One-Part, RTV	_____	_____
6.	Appearance	Paint	_____	_____
7.	Specific Gravity	1.10-1.25	_____	_____
8.	Color of Coating (White/Gray/Blue or any other subject to Consultant/Engineer's approval)	*	_____	_____
9.	Application Temperature Range, ° C	0°--50°C	_____	_____
10.	Skin-over time at Standard Conditions, minutes	15	_____	_____
11.	Track free time at Standard Conditions, minutes	15-45	_____	_____
12.	Percent Solids by weight, %	≥ 70	_____	_____
13.	Dynamic Viscosity. cP (centipoise)	1000-3500	_____	_____
14.	Dielectric Strength, V/mil (ASTM D149)	350-560	_____	_____
15.	Volume Resistivity. Ohm.cm (ASTM D257)	1x10 ¹⁴ –37x10 ¹⁴	_____	_____
16.	Dissipation Factor at 100 Hz (ASTM D150)	0.01-0.09	_____	_____
17.	Tracking Wheel Withstand, hours	1000	_____	_____
18.	Receding Water Contact Angle. degrees, minimum	≥80	_____	_____
Material				
19.	Dry Arc Resistance, Seconds	180-200	_____	_____
20.	Reinforcing Filler	*	_____	_____

21.	Alumina Trihydrate (ATH) Content	*	_____	_____
22.	UV Absorbent	*	_____	_____
23.	Condensation Catalyst	*	_____	_____
24.	Adhesion Promoter	*	_____	_____
25.	Longevity (Service Life), years	*	_____	_____
Material Consumption per insulator:				
26.	Quantity of RTV coating required for one 80kN Fog Type Disc Insulator, kg, maximum	*	_____	_____
27.	Quantity of RTV coating required for one 160kN Anti Fog Type Disc Insulator, kg, maximum	*	_____	_____
Composition and Properties:				
28.	Dry Film Thickness (DFT), mm, minimum	As per clause 7.2.3.1 of Appendix-IV of Vol-II	_____	_____
29.	Tolerance (±) of DFT, mm	*	_____	_____
30.	Wet Film Thickness	*	_____	_____
31.	No. of Coats to achieve DFT	*	_____	_____
32.	Shelf life, months	12	_____	_____
33.	No Flashover Warranty, Years	10	_____	_____
34.	Recommended Dew Point Temperature Difference Range, °C	*	_____	_____
TYPE TESTS				
35.	Inclined Plane Tracking & Erosion Test as per IEC 60587	Yes	_____	_____
36.	Accelerated Weathering Test (1000 Hours) as per IEC 61109	Yes	_____	_____
37.	Artificial Pollution Test by Salt Fog Method as per IEC 60507	Yes	_____	_____
38.	Angle of Hydrophobicity as per IEC TS 62073	Yes	_____	_____
39.	Hydrophobicity Recovery by Corona Test Method	Yes	_____	_____
40.	Dry Arc Resistance as per ASTM	Yes	_____	_____

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41.	Dielectric Strength Test as per ASTM D149a	Yes	_____	_____
42.	Volume & Surface Resistivity Test as per ASTM D257	Yes	_____	_____
43.	Dissipation Factor Test as per ASTM D150	Yes	_____	_____

Note:

'A'- Employer's Specified Data/Parameters

'B'- Bidder's Proposed Data/Parameters

'C'- Remarks Supporting the Proposed Deviation in Column 'B'

('*)- Data/Parameter to be Provided/Proposed by the Bidder in Column 'B'

Name of Manufacturer: _____

Signed and Stamped by Manufacturer: _____

Name of the Bidder: _____

Signed and Stamped by the Bidder: _____