



**National Grid Company of Pakistan
Limited (NGC)**

Bidding Document

AFD-TL-03-2026

**Procurement of Transmission Line Conductor for 220kV T/Lines
Associated with 500/220kV Sialkot & 220kV Arifwala Substations**

Volume-I

Single-Stage: One-Envelope Bidding Procedure

Agence Française de Développement



September, 2026



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Issued: 24th September, 2026

Invitation for Bids No.: IFB-AFD-TL-03-2026

OCB No.: AFD-TL-03-2026

Purchaser: National Grid Company of Pakistan Limited (NGC)

Country: Islamic Republic of Pakistan

Preface

This Bidding Document for Procurement of Goods has been prepared by National Grid Company of Pakistan Limited (NGC) and is based on the Standard Bidding Document for the Procurement of Goods issued by the Agence Française de Développement (AFD), dated March 2017.

This document reflects the structure and the provisions of the Master Procurement Document for the Procurement of Goods, except where specific considerations within the Agence Française de Développement (AFD), have required a change.

These Bidding Documents for Procurement of Goods, assumes that no prequalification has taken place before bidding

BIDDING DOCUMENT

AFD-TL-03-2026

Procurement of Transmission Line Conductor for 220kV Transmission Lines Associated with 500/220kV Sialkot Substation And 220kV Arifwala Substation

IPC No: AFD-TL-03-2026

Project: Financing under Agence Française de Developpment (AFD) Loan. Procurement of Transmission Line Conductor for 220kV Transmission Lines associated with 500/220kV Sialkot Substation & 220kV Arifwala Substation

Purchaser: National Grid Company of Pakistan Limited (NGC)

Country: Islamic Republic of Pakistan

Issued on: 24th September-2026

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PART 1 – Bidding Procedures

Section I. Instructions to Bidders

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Section I. Instructions to Bidders

A. General

1. **Scope of Bid**
 - 1.1 In connection with the Invitation for Bids, **specified in the Bid Data Sheet (BDS)**, the Purchaser, **as specified in the BDS**, issues these Bidding Documents for the Procurement of Goods and Related Services incidental thereto as specified in Section VII, Schedule of Requirements. The name, identification and number of lots (contracts) of this International Procurement Competition (IPC) are **specified in the BDS**.
 - 1.2 Throughout these Bidding Documents:
 - (a) The term “in writing” means communicated in written form (e.g. by mail, e-mail, fax, telex) with proof of receipt;
 - (b) If the context so requires, “singular” means “plural” and vice versa; and
 - (c) “Day” means calendar day.
2. **Source of Funds**
 - 2.1 The Purchaser **specified in the BDS** has applied for or received financing (hereinafter called “funds”) from the Agence Française de Développement (hereinafter called “the AFD”), toward the project named **in BDS**. The Purchaser intends to apply a portion of the funds to eligible payments under the contract for which these Bidding Documents are issued.
3. **Corrupt and Fraudulent Practices**
 - 3.1 The AFD requires compliance with its policy regarding corrupt and fraudulent practices as set forth in Section VI.
 - 3.2 In further pursuance of this policy, Bidders shall permit and shall cause its agents (where declared or not), sub-contractors, sub-consultants, service providers or suppliers and to permit the AFD to inspect all accounts, records and other documents relating to the submission of the application, bid submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the AFD.
4. **Eligible Bidders**
 - 4.1 A Bidder may be a firm that is a private entity, a state-owned entity- subject to ITB 4.3- or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.
 - 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to

have a conflict of interest for the purpose of this bidding process, if the Bidder:

- (a) Directly or indirectly controls, is controlled by or is under common control with another Bidder; or
- (b) Receives or has received any direct or indirect subsidy from another Bidder; or
- (c) Has the same legal representative as another Bidder; or
- (d) Has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; or
- (e) Participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which such Bidder is involved. However, this does not limit the inclusion of the same subcontractor in more than one bid; or
- (f) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods that are the subject of the bid; or
- (g) Any of its affiliates has been hired (or is proposed to be hired) by the Purchaser for the Contract implementation; or
- (h) Has a close business or family relationship with a professional staff of the Purchaser (or of the project implementing agency, or of a recipient of a part of the funds) who: (i) are directly or indirectly involved in the preparation of the bidding documents or specifications of the contract, and/or the bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the AFD throughout the procurement process and execution of the contract.

4.3 The AFD's eligibility criteria to bid are described in Section V, Eligibility criteria.

4.4 A Bidder shall not be under suspension from bidding by the Purchaser as the result of the execution of a Bid-Securing Declaration.

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

5. Eligible Goods and Related Services

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

- 5.2 For purposes of this Clause, the term “goods” includes commodities, raw material, machinery, equipment, and industrial plants; and “related services” includes services such as insurance, installation, training, and initial maintenance.
- 5.3 The term “origin” means the country where the goods have been mined, grown, cultivated, produced, manufactured or processed; or, through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

B. Contents of Bidding Documents

6. Sections of Bidding Documents

- 6.1 The Bidding Documents consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

PART 1 - Bidding Procedures

- Section I. Instructions to Bidders (ITB);
- Section II. Bidding Data Sheet (BDS);
- Section III. Evaluation and Qualification Criteria;
- Section IV. Bidding Forms;
- Section V. Eligibility Criteria;
- Section VI. AFD Policy - Corrupt and Fraudulent Practices and Social and Environmental Responsibility;

PART 2 - Supply Requirements

- Section VII. Schedule of Requirements;

PART 3 - Contract

- Section VIII. General Conditions of Contract (GCC);
- Section IX. Special Conditions of Contract (SCC);
- Section X. Contract Forms.

- 6.2 The Invitation for Bids issued by the Purchaser is not part of the Bidding Documents.
- 6.3 Unless obtained directly from the Purchaser, the Purchaser is not responsible for the completeness of the Bidding Documents, responses to requests for clarification or Addenda to the Bidding Documents in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Purchaser shall prevail.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents and to furnish with its Bid all information or documentation as is required by the Bidding Documents.

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| <p>7. Clarification of Bidding Documents</p> | <p>7.1 A Bidder requiring any clarification of the Bidding Documents shall contact the Purchaser in writing at the Purchaser's address specified in the BDS. The Purchaser will respond in writing to any request for clarification, provided that such request is received no later than 14 (fourteen) days prior to the deadline for submission of bids. The Purchaser shall forward copies of its response to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so specified in the BDS, the Purchaser shall also promptly publish its response at the web page identified in the BDS. Should the clarification result in changes to the essential elements of the Bidding Documents, the Purchaser shall amend the Bidding Documents following the procedure under ITB 8 and ITB 22.2.</p> |
| <p>8. Amendment of Bidding Document</p> | <p>8.1 At any time prior to the deadline for submission of bids, the Purchaser may amend the Bidding Documents by issuing addenda.</p> <p>8.2 Any addendum issued shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Documents from the Purchaser in accordance with ITB 6.3. The Purchaser shall also promptly publish the addendum on the Purchaser's web page in accordance with ITB 7.1.</p> <p>8.3 To give Bidders reasonable time in which to take an addendum into account in preparing their bids, the Purchaser may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2.</p> |

C. Preparation of Bids

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| <p>9. Cost of Bidding</p> | <p>9.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.</p> |
| <p>10. Language of Bid</p> | <p>10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.</p> |
| <p>11. Documents Comprising the Bid</p> | <p>11.1 The Bid shall comprise the following:</p> <ul style="list-style-type: none"> (a) Bid submission Form and the Bidding Forms in accordance with ITB 12; (b) Completed schedules, in accordance with ITB 12 and 14; (c) Bid Security or Bid-Securing Declaration, in accordance with ITB 19.1; |

- (d) Alternative bids, if permissible, in accordance with ITB 13;
- (e) Written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
- (f) Statement of Integrity, Eligibility and Social and Environmental Responsibility duly signed, in accordance with ITB 12;
- (g) Documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the contract if its Bid is accepted;
- (h) Documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to bid;
- (i) Documentary evidence in accordance with ITB 16, that the Goods and Related Services to be supplied by the Bidder are of eligible origin;
- (j) Documentary evidence in accordance with ITB 16 and 29, that the Goods and Related Services conform to the Bidding Documents;
- (k) Any other document **required in the BDS**.

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

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

12. Bid Submission Form, Bidding Forms and Statement of Integrity and Price Schedules

12.1 The Bid Submission Form, the Bidding Forms and the Statement of Integrity and Price Schedules shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.4. All blank spaces shall be filled in with the information requested.

13. Alternative Bids

13.1. Unless otherwise **specified in the BDS**, alternative bids shall not be considered.

14. Bid Prices and Discounts

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

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

- 14.3 The price to be quoted in the Bid Submission Form shall be the total price of the bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Bid Submission Form.
- 14.5 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, **unless otherwise specified in the BDS**. A bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB 29. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.
- 14.6 If so specified in ITB 1.1, bids are being invited for individual lots (contracts) or for any combination of lots (packages). Unless otherwise **specified in the BDS**, prices quoted shall correspond to 100 % of the items specified for each lot and to 100% of the quantities specified for each item of a lot. Bidders wishing to offer discounts for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4 provided the bids for all lots (contracts) are opened at the same time.
- 14.7 The term CIP, DDP and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by The International Chamber of Commerce, **as specified in the BDS**.
- 14.8 Prices shall be quoted as specified in each Price Schedule included in Section IV, Bidding Forms. The disaggregation of price components is required solely for the purpose of facilitating the comparison of bids by the Purchaser. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Section V, Eligibility Criteria. Similarly, the Bidder may obtain insurance services from any eligible country in accordance with Section V, Eligibility Criteria. Prices shall be entered in the following manner:
- (a) For Goods manufactured in the Purchaser's Country:
- (i) The price of the Goods quoted CIP named place of destination, including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods; and
- (ii) Any Purchaser's Country sales tax and other taxes which will be payable on the Goods if the contract is awarded to the Bidder.

- (b) For Goods manufactured outside the Purchaser's Country, to be imported:
 - (i) The price of the Goods, quoted CIP named place of destination, in the Purchaser's Country, **as specified in the BDS**; and
 - (ii) Any Purchaser's Country sales and other taxes which will be payable on the Goods if the contract is awarded to the Bidder.
- (c) For Goods manufactured outside the Purchaser's Country, already imported:
 - (i) The price of the Goods, quoted CIP named place of destination, excluding the custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already imported;
 - (ii) All custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already imported in the Purchaser's country, payable on the Goods, if the Contract is awarded to the Bidder;
 - (iii) Any Purchaser's Country sales and other taxes which will be payable on the Goods if the contract is awarded to the Bidder; and
- (d) For Related Services specified in Section VII - Schedule of Requirements:
 - (i) The price of each item comprising the Related Services (exclusive of any applicable taxes);
 - (ii) All custom duties, sales and other taxes applicable in the Purchaser's country, payable on the Related Services, if the Contract is awarded to the Bidder.

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| 15. Currencies of Bid and Payment | 15.1 | The currency(ies) of the bid and the currency(ies) of payments shall be as specified in the BDS . The Bidder shall quote in the currency of the Purchaser's Country the portion of the bid price that corresponds to expenditures incurred in the currency of the Purchaser's country, unless otherwise specified in the BDS . |
| 16. Documents Establishing the Eligibility and Conformity of the Goods and Related Services | 16.1 | To establish the eligibility of the Goods and Related Services in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Bidding Forms. |
| | 16.2 | To establish the conformity of the Goods and Related Services to the Bidding Documents, the Bidder shall furnish as part of its Bid the |

documentary evidence that the Goods conform to the technical specifications and standards specified in Section VII, Schedule of Requirements.

- 16.3 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations and exceptions to the provisions of the Section VII, Schedule of Requirements.
- 16.4 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period **specified in the BDS** following commencement of the use of the goods by the Purchaser.
- 16.5 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.

**17. Documents
Establishing the
Eligibility and
Qualifications of
the Bidder**

- 17.1 To establish Bidder's their eligibility in accordance with ITB 4, Bidders shall complete the Bid Submission Form, included in Section IV, Bidding Forms.
- 17.2 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction:
- (a) That, if **required in the BDS**, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser's Country;
 - (b) That, if **required in the BDS**, in case of a Bidder not doing business within the Purchaser's Country, the Bidder is or will be (if awarded the contract) represented by an Agent in the country equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and
 - (c) That the Bidder meets each of the qualification criterion specified in Section III, Evaluation and Qualification Criteria.

**18. Period of
Validity of Bids**

- 18.1 Bids shall remain valid for the period **specified in the BDS** after the bid submission deadline date prescribed by the Purchaser in accordance with ITB 22.1. A bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.
- 18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB Clause 19, it shall also be extended for twenty-eight (28) days beyond the deadline of the extended 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, except as provided in ITB 18.3.
- 18.3 If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity, the Contract price shall be determined as follows:
- (a) In the case of fixed price contracts, the Contract price shall be the bid price adjusted by the factor **specified in the BDS**;
 - (b) In the case of adjustable price contracts, no adjustment shall be made;
 - (c) In any case, bid evaluation shall be based on the bid price without taking into consideration the applicable correction from those indicated above.

19. Bid Security

- 19.1 The Bidder shall furnish as part of its bid, either a Bid-Securing Declaration or a bid security, as **specified in the BDS**, in original form and, in the case of a bid security, in the amount and currency **specified in the BDS**.
- 19.2 A Bid Securing Declaration shall use the form included in Section IV, Bidding Forms.
- 19.3 If a bid security is specified pursuant to ITB 19.1, the bid security shall be a demand guarantee in any of the following forms at the Bidder's option:
- (a) An unconditional guarantee issued by a bank or financial institution (such as an insurance, bonding or surety company);
 - (b) An irrevocable letter of credit;
 - (c) A cashier's or certified check; or
 - (d) Another security **specified in the BDS**;
- from a reputable source from an eligible country as specified in Section V, Eligibility Criteria. If the unconditional guarantee is issued by a financial institution located outside the Purchaser's Country, the issuing financial institution shall have a correspondent financial institution located in the Purchaser's Country to make it enforceable. In the case of a bank guarantee, the bid security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Purchaser prior to bid submission. The bid security shall be valid for twenty-eight (28) days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.
- 19.4 If a Bid Security is specified pursuant to ITB 19.1, any bid not accompanied by a substantially responsive Bid Security or Bid-Securing Declaration shall be rejected by the Purchaser as non-responsive.
- 19.5 The Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the Performance Security pursuant to ITB 42.
- 19.6 The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the contract and furnished the required performance security.
- 19.7 The Bid Security may be forfeited or the Bid Securing Declaration executed:
- (a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Submission Form, or any extension thereto provided by the Bidder; or
 - (b) If the successful Bidder fails to:

- (i) Sign the Contract in accordance with ITB 41; or
 - (ii) Furnish a performance security in accordance with ITB 42.
- 19.8 The Bid Security or Bid- Securing Declaration of a JV must be in the name of the JV that submits the bid. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, the Bid Security or Bid-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2.
- 19.9 If a bid security is **not required in the BDS**, pursuant to ITB 19.1, and:
- (a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Submission Form, or any extension thereto provided by the Bidder; or
 - (b) If the successful Bidder fails to: sign the Contract in accordance with ITB 41; or furnish a performance security in accordance with ITB 42;

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

20. Format and Signing of Bid

- 20.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11 and clearly mark it "ORIGINAL." Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE." In addition, the Bidder shall submit copies of the bid, in the number **specified in the BDS** and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.
- 20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation **as specified in the BDS** and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid where entries or amendments have been made shall be signed or initialed by the person signing the bid.
- 20.3 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, then the Bid shall be signed by every member of the proposed JV.
- 20.4 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

D. Submission and Opening of Bids

21. Sealing and Marking of Bids

- 21.1 The Bidder shall enclose the original and all copies of the bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as “ORIGINAL”, “ALTERNATIVE” and “COPY”. These envelopes containing the original and the copies shall then be enclosed in one single envelope.
- 21.2 The inner and outer envelopes shall:
- (a) Bear the name and address of the Bidder;
 - (b) Be addressed to the Purchaser in accordance with ITB 22.1;
 - (c) Bear the specific identification of this bidding process indicated in ITB 1.1; and
 - (d) Bear a warning not to open before the time and date for bid opening.
- 21.3 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the bid.

22. Deadline for Submission of Bids

- 22.1 Bids must be received by the Purchaser at the address and no later than the date and time **specified in the BDS. When so specified in the BDS**, bidders shall have the option of submitting their bids electronically. Bidders submitting bids electronically shall follow the electronic bid submission procedures **specified in the BDS**.
- 22.2 The Purchaser may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Documents in accordance with ITB 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

23. Late Bids

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

24. Withdrawal, Substitution, and Modification of Bids

- 24.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization (the power of attorney) in accordance with ITB 20.2. The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:
- (a) Prepared and submitted in accordance with ITB 20 and 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked “WITHDRAWAL,” “SUBSTITUTION,” or “MODIFICATION”; and

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

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

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

25. Bid Opening

25.1 Except as in the cases specified in ITB 23 and 24, the Purchaser shall publicly open and read out in accordance with ITB 25 all bids received by the deadline (regardless of the number of bids received), at the date, time and place **specified in the BDS** in the presence of Bidders' designated representatives and anyone who choose to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted, in accordance with ITB 22.1, shall be as **specified in the BDS**.

25.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid opening. Only bids that are opened and read out at Bid opening shall be considered further.

25.3 All other envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Prices, per lot (contract) if applicable, including any discounts and alternative bids; the presence or absence of a Bid Security or Bid-Securing Declaration, if required; and any other details as the Purchaser may consider appropriate. Only discounts and alternative bids read out at Bid opening shall be considered for evaluation. The Bid Submission Form and the Price Schedules are to be initialed by a minimum of three representatives of the Purchaser attending bid opening. The Purchaser shall neither discuss the merits of any bid nor reject any bid (except for late bids, in accordance with ITB 23.1).

25.4 The Purchaser shall prepare a record of the bid opening that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot

(contract) if applicable, including any discounts, and alternative bids; and the presence or absence of a Bid Security 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.

E. Evaluation and Comparison of Bids

- 26. Confidentiality**
- 26.1 Information relating to the examination, evaluation, and comparison of the bids, and qualification of the Bidders and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with the bidding process until information on Contract Award is communicated to all Bidders in accordance with ITB 40.
- 26.2 Any attempt by a Bidder to influence the Purchaser in the examination, evaluation, and comparison of the bids, and qualification of the bidders, or contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it shall do so in writing.
- 27. Clarification of Bids**
- 27.1 To assist in the examination, evaluation, comparison of the bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid, given a reasonable time for a response. Any clarification submitted by a Bidder that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the bids, in accordance with ITB 31.
- 27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Purchaser's request for clarification, its Bid may be rejected.

**28. Deviations,
Reservations,
and Omissions**

- 28.1 During the evaluation of bids, the following definitions apply:
- (a) “Deviation” is a departure from the requirements specified in the Bidding Documents;
 - (b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and
 - (c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Documents.

**29. Determination of
Responsiveness**

- 29.1 The Purchaser’s determination of a bid’s responsiveness is to be based on the contents of the bid itself, as defined in ITB 11.
- 29.2 A substantially responsive Bid is one that meets the requirements of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:
- (a) If accepted, would:
 - (i) Affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or
 - (ii) Limit in any substantial way, inconsistent with the Bidding Documents, the Purchaser’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.
- 29.3 The Purchaser shall examine the technical aspects of the bid submitted in accordance with ITB 16, in particular, to confirm that all requirements of Section VII, Schedule of Requirements have been met without any material deviation or reservation, or omission.
- 29.4 If a bid is not substantially responsive to the requirements of the Bidding Documents, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

**30. Nonconformities,
Errors and
Omissions**

- 30.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonmaterial nonconformities in the Bid.
- 30.2 Provided that a bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the 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.

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

31. Correction of Arithmetical Errors

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

- (a) If there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;
- (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

- 31.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 31.1 shall result in the rejection of the Bid.

32. Conversion to Single Currency

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

33. Margin of Preference

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

34. Evaluation of Bids

- 34.1 The Purchaser shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.
- 34.2 To evaluate a Bid (evaluation will be done for Items or Lots (contracts), as **specified in the BDS**), the Purchaser shall consider the following:
- (a) The Bid Price as quoted in accordance with clause 14;
 - (b) Price adjustment for correction of arithmetic errors in accordance with ITB 31.1;
 - (c) Price adjustment due to discounts offered in accordance with ITB 14.4;

- (d) Price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 30.3;
 - (e) Converting the amount resulting from applying (a) to (d) above, if relevant, to a single currency in accordance with ITB 32;
 - (f) The additional evaluation factors as specified in Section III, Evaluation and Qualification Criteria.
- 34.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in bid evaluation.
- 34.4 If these Bidding Documents allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Bid Submission Form, is specified in Section III, Evaluation and Qualification Criteria
- 34.5 The Purchaser's evaluation of a bid will exclude and not take into account:
- (a) In the case of Goods manufactured in the Purchaser's Country, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder;
 - (b) In the case of Goods manufactured outside the Purchaser's Country, already imported or to be imported, customs duties and other import taxes levied on the imported Good, sales and other similar taxes, which will be payable on the Goods if the contract is awarded to the Bidder;
 - (c) In the case of Related Services, customs duties and sales and other similar taxes that will be payable on the Related Services if the contract is awarded to the Bidder;
 - (d) Any allowance for price adjustment during the period of execution of the contract, if provided in the bid.
- 34.6 The Purchaser's evaluation of a bid may require the consideration of other factors, in addition to the Bid Price quoted in accordance with ITB 14. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of bids, unless otherwise **specified** in Section III, Evaluation and Qualification Criteria. The criteria and methodologies to be used shall be as specified in Section III, Evaluation and Qualification Criteria.
- 34.7 If the bid, which results in the lowest Evaluated Bid Price, is significantly lower than the Purchaser's estimate, the Purchaser shall 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 supply requirements and the method and schedule

proposed. If one or several inconsistencies are evidenced, the bid shall be declared non-compliant and rejected.

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| 35. Comparison of Bids | 35.1 | The Purchaser shall compare the evaluated prices of all substantially responsive bids established in accordance with ITB 34.2 to determine the lowest evaluated bid. |
| 36. Qualification of the Bidder | 36.1 | The Purchaser shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive bid meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria. |
| | 36.2 | The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17. |
| | 36.3 | An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. A negative determination shall result in disqualification of the bid, in which event the Purchaser shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder's qualifications to perform satisfactorily. |
| 37. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids | 37.1 | The Purchaser reserves the right to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders. |

F. Award of Contract

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| 38. Award Criteria | 38.1 | Subject to ITB 37.1, the Purchaser shall award the Contract to the Bidder whose bid has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily. |
| 39. Purchaser's Right to Vary Quantities at Time of Award | 39.1 | At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section VII, Schedule of Requirements, provided this does not exceed the percentages specified in the BDS , and without any change in the unit prices or other terms and conditions of the bid and the Bidding Documents. |
| 40. Notification of Award | 40.1 | Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Purchaser will pay the Supplier in consideration of the supply of Goods (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price"). At the same time, the Purchaser shall also notify all other Bidders of the results of the bidding. |

- 40.2 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.
- 40.3 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with ITB 40.1, requests in writing the grounds on which its bid was not selected.
- 41. Signing of Contract**
- 41.1 Promptly after notification, the Purchaser shall send the successful Bidder the Contract Agreement.
- 41.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.
- 41.3 Notwithstanding ITB 41.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, where such export restrictions arise from trade regulations from a country supplying those products/goods, systems or services, the Bidder shall not be bound by its bid, always provided however, that the Bidder can demonstrate to the satisfaction of the Purchaser and of the AFD that signing of the Contract Agreement has not been prevented by any lack of diligence on the part of the Bidder in completing any formalities, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract.
- 42. Performance Security**
- 42.1 Within twenty-eight (28) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the Performance Security in accordance with the GCC, using for that purpose the Performance Security Form included in Section X, Contract Forms, or another Form acceptable to the Purchaser. If the Performance Security furnished by the successful Bidder is in the form of a bond, it shall be issued by a bonding or insurance company that has been determined by the successful Bidder to be acceptable to the Purchaser. A foreign institution providing a bond shall have a correspondent financial institution located in the Purchaser's Country.
- 42.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security or execution of the Bid-Securing Declaration. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose bid is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

Section II. Bid Data Sheet (BDS)

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

ITB Clause Reference	A. General				
ITB 1.1	The number of the Invitation for Bids is: <i>[IFB-AFD-TL-03-2026]</i>				
ITB 1.1	The Purchaser is: Director General (Procurement), National Grid Company of Pakistan Limited, (NGC), 8th Floor, Shaheen Complex, Egerton Road, Lahore, Pakistan Postal Code: 54000 Telephone: (0092) 42-99202597 E-mail address: dg.procurement@ngc.gov.pk				
ITB 1.1	The name is <u>Procurement of Transmission Line Conductor For 220kV Transmission Lines Associated With 500/220kV Sialkot & 220kV Arifwala Substations</u> and identification number of the IPC is: <i>[AFD-TL-03-2026]</i> <table border="1"> <thead> <tr> <th>Description of Goods</th><th>Quantity</th></tr> </thead> <tbody> <tr> <td>ACSR Rail Conductor</td><td>448 km</td></tr> </tbody> </table> The bidding is open on International Competitive Bidding through Single Stage-One Envelope (1S1E) procedure.	Description of Goods	Quantity	ACSR Rail Conductor	448 km
Description of Goods	Quantity				
ACSR Rail Conductor	448 km				
ITB 2.1	The name of the Project is: Financing under Agence Française de Développement (AFD) Loan. <u>Procurement of Transmission Line Conductor for 220kV Transmission Lines Associated With 500/220kV Sialkot & 220kV Arifwala Substations.</u>				
ITB 4.2	Following Sub-Clause 4.2 (i) is added at end of ITB 4.2 Two or more firms partially or wholly owned or directed by common individuals, regardless of the extent of their shares or interest with each other shall not be eligible to bid or compete for the same tender. Only one such firm shall be eligible to bid for a tender. However, such firms may form a joint venture to bid as one venture.				

ITB 4.6	Following Sub-Clauses are added after ITB 4.5: a) The local Bidder shall be registered with Income Tax and Sales Tax Departments and shall be on Active Taxpayers List of the Federal Board of Revenue. b) The Bidder/manufacturer shall not be blacklisted by NGC/WAPDA/DISCOs/any Government/Public department/Donor Agencies at the time of submission of bids. The Bidder/manufacturer should provide details of previous black listing, if any. An affidavit is to be provided by the Bidder/manufacturer that the Bidder/manufacturer is not black listed by NGC/WAPDA/DISCOs/any Government/Public department/Donor Agencies at the time of submission of bids. c) The bidder shall submit dully filled/complete Beneficial Ownership Declaration Performa as Per the S.R.O 592(1)/2022 available at https://www.ppra.org.pk/doc/sro592.pdf d) Firms shall be excluded if by an act of compliance with decision of the United Nations Security Council taken under Chapter VII of Charter of the United Nations, Pakistan prohibits any import of good or contracting of works or services from that country or any payment to persons or entities in that country.
	B. Contents of Bidding Documents
ITB 6.1	Following paragraph shall be added: Volume-II: 1. NGC's SOP for Blacklisting of Contractors 2. NGC Type Test Policy 3. Specifications and Drawings
ITB 7.1	For <u>clarification of bid purposes</u> only, the Purchaser's address is: Attention: Director General (Procurement) National Grid Company of Pakistan Limited (NGC) 8th Floor, Shaheen Complex, Egerton Road, Lahore, Pakistan Postal Code: 54000 Telephone: +92-42-99202597 E-mail address: dg.procurement@ngc.gov.pk A Pre-Bid meeting shall take place as follows: Date: 20th October-2026 Time: 10:00 AM (Pakistan Standard Time) Place: 8th Floor, Shaheen Complex, Egerton Road Lahore, Pakistan. Please note that, for Post-Bid Clarifications, all correspondence will be done directly with the evaluator, and with confidentiality.
ITB 7.1	Web page : www.ntdc.gov.pk

	C. Preparation of Bids
ITB 10.1	The language of the bid is English. All correspondence exchange shall be in the English language. Language for translation of supporting documents and printed literature is English. Following is added at the end of this Sub-Clause. Such translation shall be duly notarized English translation of the original document.
ITB 11.1 (k)	The Bidder shall submit the following additional documents in its bid: - Legal Registration Certificate of the Bidder/JV and/or Copies of Documents defining the constitution or legal status, place of registration and principal place of business as required in ITB 4.1. - As required in ITB-20.2: - For foreign firm/bidder, board resolution and power of attorney to be submitted. - For local firm, board resolution and/or power of attorney provided on stamp paper worth Rs. 1000 or as per governing law, whichever is higher, is to be submitted. <i>(In case of non-submission or non-compliance of a valid power of attorney, post bid clarification can be sought to submit the same within fourteen (14) calendar days of receiving such request and its failure shall lead to rejection of the bid.)</i> - Form BLK – 1: Undertaking of Acceptance of and Compliance with NGC’s SOP for Blacklisting of Contractors (as per format given in Section-4). Non-submission of this undertaking may result in the rejection of the bid. The said undertaking will subsequently become part of Contract Agreement as well. - Form BLK – 2: An affidavit that the Bidder has not been black listed by NGC/WAPDA/DISCOs/any Government/Public Department/Donor Agencies at the time of submission of bids. - Form EXP – 4.2(a): Supply Record - Form EXP – 4.2(b): Manufacturer’s Experience of Supply Record - Form EXP – 4.3: Production Capacity - Form EXP – 4.4: General Information & Evidence of the Manufacturer’s Capability - Form PER – 1: Performance Certificate - Form SUP – 1: Manufacturer’s Orders in Hand and its Implementation Schedule - Form DEV – 1: Deviations from Technical Provisions - Form DEV – 2: Deviations from Contractual Conditions - Form BNK – 1: Bank Certificate <i>(Optional)</i> - Form ORG – 1: Organization Chart

	o. Duly filled-in Schedules of Technical Data as per forms given in Annexure-I “Specific Goods Data”. p. Details of manufacturing facility / equipment q. Details of manufacturing process r. Dully filled/complete Beneficial Ownership Declaration Performa as per ITB 4.6(d). s. Drawings, complete literature, catalogues, and brochures in respect of the equipment to be supplied. t. Type test reports of the offered equipment (if any) along with unconditional undertaking, duly signed and stamped by the bidder and supported by manufacturer(s) in accordance with clause 2 “Type Test Policy” of NGC’s Revised Test Policy of 2022. Failure to submit undertaking may result in rejection of the bid. In case of discrepancy between the Original and electronic copy, the Original shall prevail.
ITB 12.2	Following Sub-Clause is added: 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.
ITB 13.1	Alternative Bids shall not be permitted.
ITB 14.5	The prices quoted by the Bidder shall be adjustable as per Attached Price Adjustment Criteria given in Section IX.
ITB 14.6	The following is added after the Sub-Clause 14.6: 14.6(a) Bids for partial scope of supply will be liable to rejection.
ITB 14.7	The Incoterms edition is Incoterms 2020
ITB 14.8 (a)(i)	Sub-Clause 14.8 (a)(i) is replaced by following For Goods offered from within the Purchaser’s country, the Bidder shall quote prices using the Incoterms i.e. EXW (ex works, ex-factory, ex warehouse, ex showroom, or off-the-shelf, as applicable) including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of goods quoted ex works or ex-factory, or on the previously imported goods of foreign origin quoted ex warehouse, ex showroom, or off-the-shelf.
ITB 14.8 (b)(i)	The following text is added at the end of this sub-clause: For Goods offered from outside the Purchaser’s country, the Bidder shall quote prices using the CIP (Karachi) Incoterms. The Bidder shall, in addition to above, provide the price break-ups of FOB, Insurance, Sea Freight and C&F components (as required in Price Schedules).
ITB 14.8 (c)(i)	Not Applicable.
ITB 15.1	Currencies of the Bid: Bidders may express their bid price in any fully convertible currency. If a Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly. However, such different currencies should not exceed three currencies.

	The Bidder is required to quote in the currency of the Purchaser's Country the portion of the bid price that corresponds to expenditures incurred in that currency. Bidders may be required by the Purchaser to clarify/justify their foreign currency requirements.
ITB 17.2 (a)	Manufacturer's authorization is Required. The Bidder is required to submit documentation to substantiate that it is an authorized dealer or distributor or reseller of the Goods being supplied.
ITB 17.2 (b)	Not Required.
ITB 18.1	The bid validity period shall be 150 days after the bid submission deadline
ITB 18.3	The bid price shall not be adjusted.
ITB 19.1	All Bids must be accompanied by a Bid Security of amount not less than that mentioned below. Bid security amount (minimum) = USD 56,354/- All Bids must be accompanied with a Bid Security in USD or equivalent amount of PKR or 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. In case the Bid Security is provided in any other convertible currency, the foreign currency exchange risk, if any, in case of encashment of Bid Security shall be borne by the Bidder.
ITB 19.2	Not Applicable.
ITB 19.3	The provisions of Sub-Clause ITB 19.3 (b) & (c) are deleted and (a) & (d) are amended as follows: (a) An unconditional bank guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan. For avoidance of doubt, a Bid Security issued by a foreign bank but not counter-guaranteed by a Scheduled Bank in Pakistan shall not be acceptable and rejected as non-responsive. (d) 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 ITB 19.3. The same shall be in favor of: Chief Engineer (MP&M) NTDC Account No. 001000048380405 Allied Bank Limited, WAPDA House Branch, Lahore Swift Code: ABPAPKKALHR. Chief Engineer (MP&M) NTDC Account No. 0005527900518901 Habib Bank Limited, WAPDA House Branch, Lahore Swift Code: HABBPKKA552
ITB 19.4	Subject to the succeeding sentences, a bid must be accompanied by an acceptable Bid Security that is unconditional, irrevocable and callable. If a Bidder submits a

	Bid Security that has following discrepancies (to the extent mentioned against each), the Purchaser shall request the Bidder to submit a compliant bid security within fourteen (14) calendar days of receiving of such request. Failure to provide a compliant Bid Security within the prescribed period of receiving such a request shall cause the rejection of the Bid. Any bid accompanied by bid security with deviation greater than the extent mentioned below shall be rejected. i. Bid Security amount is short within 10% of the required Bid Security amount; and/or ii. Bid Security validity period is short by a maximum of two days. iii. Any changes with respect to format/text which does not hurt the right of employer for encashment of the guarantee and does not limit the obligation of the bidder as required in the Bidding Document/Bid Security Format. Any bid accompanied by bid security shall be rejected If, a. Bid Security 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); and/or, b. Bid Security issued by a foreign bank but not counter guaranteed by a local schedule bank in Pakistan.
ITB 20.1	In addition to the original Bid, the number of copies is: Three (03). Electronic/soft copy of complete Bid in USB containing an electronic version of the Bid in PDF Searchable format scanned from the original bid, and filled Price Schedules in MS Excel Format. This should be enclosed in the sealed envelope containing the Original Bid. In case of discrepancy between the Original and electronic copy, the Original shall prevail. In case the bidder has participated in more than one lots, the bid of each lot shall be sealed in separate envelope.
ITB 20.2	The written confirmation of Authorization to sign on behalf of the Bidder shall consist of: An organizational document/chart, 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, shall be provided. 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. If the Joint Venture has not been formed, also include evidence from all proposed Joint Venture partners of their intent to enter into a Joint Venture in the event of the Contract award following ITB 4.1. Further, the Authorization must contain the specimen signature of the person authorized to sign the Bid. The Power of Attorney shall be submitted as per the following procedure: 1) For foreign firm/bidder, board resolution and power of attorney is to be submitted.

	2) For local firm, board resolution and/or power of attorney provided on stamp paper worth Rs. 1000 or as per governing law, whichever is higher, is to be submitted. (In case of non-submission or non-compliance of a valid power of attorney, post bid clarification can be sought to submit the same within fourteen (14) calendar days of receiving such request and its failure may lead to rejection of the bid).
	D. Submission and Opening of Bids
ITB 22.1	For bid submission purposes, the Purchaser's address is: Director General (Procurement) National Grid Company of Pakistan Limited (NGC) 8th Floor, Shaheen Complex, Egerton Road, Lahore, Pakistan Telephone: +92-42-99202597 The deadline for the submission of bids is: Date: 27th November-2026 Time: 11:00 AM (Pakistan Standard Time)
ITB 22.1	Bidders shall not have the option of submitting their bids electronically.
ITB 25.1	The bid opening shall take place at: Director General (Procurement) National Grid Company of Pakistan Limited (NGC) 8th Floor, Shaheen Complex, Egerton Road, Lahore, Pakistan Telephone: +92-42-99202597 Date: 27th November-2026 Time: 11:30 AM (Pakistan Standard Time) No minimum number of bids is required in order to proceed to bid opening. The Bid Submission Sheet and Price Schedules shall be initialed by all the authorized representatives of the Purchaser attending the Bid opening.
	E. Evaluation and Comparison of Bids
ITB 32.1	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). 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). The date for the exchange rate shall be: the date of Bid Opening.
ITB 33.1	A margin of domestic preference shall apply. The application methodology of domestic preference is specified in Section III, Evaluation and Qualification Criteria.
ITB 34.2	If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. An item not listed in the Price Schedule shall be assumed to be not included in the bid, and provided that the bid is substantially responsive, the highest price of the item quoted by substantially

	responsive bidders will be added to the bid price and the equivalent total cost of the bid so determined will be used for price comparison.
	F. Award of Contract
ITB 39.1	The maximum percentage by which quantities may be increased is: 15% The maximum percentage by which quantities may be decreased is: 15%
ITB 42.1	The following text appearing in this Sub-Clause is deleted. “A foreign institution providing a bond shall have a correspondent financial institution located in the Purchaser’s Country.”

Section III. Evaluation and Qualification Criteria

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1. Evaluation (ITB 34)

1.1 Evaluation Criteria (ITB 34.6)

The bids will be compared and evaluated as described in ITB Section “Evaluation and Comparison of Bids”. In addition to evaluation parameters given therein, following evaluation criteria shall also be used for the purpose of evaluation of this Bid.

The comparison of bids shall be made on the basis of CIP (Karachi) prices for Goods to be offered from outside the Purchaser’s country and Ex-Works basis for goods offered from within the Purchaser’s country.

1.2 Technical Criteria

It will be examined in detail whether the Goods offered by the bidder comply with the technical specifications of the Bidding Document. For this purpose, the bidder’s Schedule of technical data & drawings submitted with the Bid will be scrutinized and only those bids which offer goods technically conforming to the requirements of the Bidding Document, shall be considered for further evaluation.

The requisite schedule of technical data as per tender specification shall be duly filled in and the same shall be submitted with the bid. In case of non-submission of the schedule of technical data along with the bid, a post bid clarification may be sought from the bidder to submit the same. Failure to submit the requisite schedule of technical data shall render the bid non-responsive.

1.2.1 Type Testing

The Goods offered by the Bidder shall be type tested in accordance with Section-VI of this Bidding Documents. In case of non-submission of type test reports with the Bid or not meeting the requirements given in Section-VI “Schedule of Requirements, Part-B: Technical Specifications” of the Bidding Documents the Bid shall be rejected by the Procuring Agency and bidder shall be declared as non-responsive.

Note: This provision/requirement is required to be fulfilled by all manufacturers including local JV partners or local subsidiaries of international manufactures.

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 NGC type test policy, he will carry out type tests as per NGC Type Test Policy within the quoted Bid price and without affecting the delivery/ completion period as mentioned in the Bidding Documents.

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, NGC reserves the right to cancel the contract agreement including encashment of performance guarantee and initiate the process for blacklisting as per NGC SOP for blacklisting.

1.3. Price Adjustment for Deviation in the Delivery Schedule

For Bids indicating delivery before specified days set out in Section VII, Schedule of Requirements- Delivery Schedule, no credit will be given in this evaluation. Bids indicating delivery later than specified days set out in Delivery Schedule shall be adjusted in this evaluation by adding a factor of 0.5% of the Discounted Corrected total bid price per week of the delivery later than the specified days. Bids indicating delivery beyond thirty (30) days later than specified days set out in delivery schedule will be rejected as non-responsive.

1.4. Multiple Lots (Contracts) (ITB 34.4)

N/A

2. Qualification (ITB 36)

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
1. Eligibility							
1.1	Nationality	Nationality in accordance with ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Forms ELI – 1.1 and 1.2, with attachments
1.2	Conflict of Interest	No conflicts of interest in accordance with ITB 4.2	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Bid Submission Form
1.3	AFD Eligibility	Not being ineligible for AFD financing, as described in ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Statement of Integrity (appendix to Bid Submission Form)
1.4	State-owned Entity	Meets conditions of ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Forms ELI – 1.1 and 1.2, with attachments
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 4.6.	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Appendix to Bid Submission Form
1.6	Black-Listing	Not having been black-listed by NGC/ WAPDA/DISCOs/ any Government/ Public Department / Donor Agencies at the time of submission of bids.	Must meet requirement	Must meet requirement	Must meet requirement	N/A	i. Form BLK – 1; ii. Form BLK – 2

Eligibility and Qualification Criteria			Compliance Requirements			Documentation	
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
2. Historical Contract Non-Performance							
2.1	History of Non-Performing Contracts	Termination of a contract ¹ did not occur as a result of Supplier default in the past 5 years.	Must meet requirement ²	Must meet requirements	Must meet requirement ²	N/A	Form CON-1
2.2	Suspension Based on Execution of Bid Securing Declaration by the Purchaser or withdrawal of the Bid within Bid validity	Not under suspension based on execution of a Bid Securing Declaration pursuant to ITB 4.4 or withdrawal of a Bid pursuant ITB 19.9.	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Bid Submission Form
2.3	Pending Litigation	All pending litigation shall in total not represent more than hundred percent (100%) of the Bidder’s net worth and shall be treated as resolved against the Bidder.	Must meet requirement	N/A	Must meet requirement	N/A	Form CON – 1

¹ Non-performance shall include all terminations of contracts where (a) non-performance was not challenged by the supplier, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the supplier. Non-performance shall not include contracts where Purchasers decision was overruled by the dispute resolution mechanism. 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.

² This requirement also applies to contracts executed by the Bidder as JV member.

Eligibility and Qualification Criteria			Compliance Requirements			Documentation	
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)		Submission Requirements	
				All Parties Combined	Each Member		
3. Financial Situation and Performance							
3.1	Financial Capabilities	<i>The audited standalone³ balance sheets or, if not required by the laws of the Bidder’s country, other standalone financial statements acceptable to the Employer, for the last three (3) years shall be submitted and must demonstrate the current soundness of the Bidder’s financial position. The Bidder’s financial position will be deemed sound if at least two (2) of the following four (4) criteria are met:</i> <i>a) Average earnings before interest, taxes, depreciation, and amortization (EBITDA) for the last three (3) years > 0;</i> <i>b) Total equity (net worth) for the last three (3) years > 0;</i> <i>c) Average liquidity ratio for the last three (3) years >1 ((Current assets) / (Current liabilities) > 1);</i>	Must meet requirement	N/A	Must meet requirement	N/A	Form FIN – 3.1, with attachments

³ The Company's financial performance as a single entity.

Eligibility and Qualification Criteria				Compliance Requirements			Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
		<i>d) Average indebtedness ratio for the last three (3) years < 6 ((Total financial liabilities) / (EBITDA) < 6).</i>					
3.2	Average Annual Supplier Turnover	Minimum “Net Average Annual Turnover” as given below, calculated as total certified payments received by the Bidder for contracts in progress or completed within the last three (03) years. USD 4.248 Million	Must meet requirement	Must meet requirement	Must meet twenty-five percent (25%) of the requirement	Must meet forty percent (40%) of the requirement	Form FIN – 3.2

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
4. Experience & Technical Capacity							
4.1	Contract Experience	Successful completion as main supplier within the last ten (10) years, of at least one (01) or multiple contract(s) having total value of contracts (i.e. sum of value of multiple contracts) at least equivalent to below mentioned amount. USD 2.832 Million	Must meet requirement	Must meet requirement	N/A	N/A	i. Form EXP-4.1 ii. Copies (with English translation) of the Contract Agreement(s) and Completion Certificate(s) / Delivery Document(s) (Bills of Lading, Inspection Certificates etc.) for the contract(s)
4.2	Technical & Manufacturing Experience	i. The Manufacturer must have at least 05 years manufacturing experience of similar Goods having similar or higher rating and capacity. ii. The Manufacturer must have experience of at least two (02) contracts for supplying similar* Goods outside the country of origin of offered equipment/goods or within	Must meet requirement	Must meet requirement	N/A	N/A	i. Forms EXP-4.3 Copies (with English translation) of the contract agreement(s) and completion certificate(s)/ delivery document(s) (bill(s) of lading, inspection

Eligibility and Qualification Criteria				Compliance Requirements			Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
		Pakistan during last ten (10) years. *Note: (Similarity) ACSR Conductors having minimum 45/7 strands shall be considered similar.					certificate(s) etc.), duly notarized, for the contract(s). ii. Purchase Orders/ Contract Agreements and Completion Certificates/ delivery documents (bills of lading and inspection certificates) of the same along with notarized translation in English if original is in different language, showing sale of equipment as given in requirement
4.3	Performance Criteria	i. The Manufacturer shall submit at least one (01) successful operational certificate with the bid from the end user from Pakistan or from outside the	Must meet requirement	Must meet requirement	N/A	N/A	i. Form PER – 1 ii. Copies of Contract Agreements and Completion

Eligibility and Qualification Criteria				Compliance Requirements			Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
		country of origin of offered Goods to establish satisfactory operation for a continuous period of at least three (03) years prior to deadline of submission of bids. The submitted performance certificate must indicate the name of the end user/client along with its contact address, phone numbers, fax numbers, website and email addresses. ii. If the Manufacturer has already supplied the offered Goods to Purchaser and the same is in satisfactory operation for a continuous period of at least three (03) years prior to deadline of submission of bids, the same shall be considered equivalent to criteria mentioned in sub-clause 4.3(i) herein above. The Manufacturer shall submit Purchase Order(s)/ Educational Order(s)/ Contract Agreement(s) in such case along with Completion					Certificates duly notarized (along with notarized translation in English if original is in different language) for projects for which Performance Certificates have been submitted; and iii. Copies of Operational Experience Certificate(s) from end-users.

Eligibility and Qualification Criteria				Compliance Requirements			Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
		Certificate(s)/ Goods Receipt Note (GRN).					
4.4	Supply Capacity	The manufacturer shall provide the following information with the Bid to establish its capacity/capability to execute the order. a. Manufacturing Capacity b. Orders in hand c. Implementation schedule of the orders in hand The manufacturing capacity of the Bidder should be at least equal to orders in hand, and this order (if placed on it).	Must meet requirement	Must meet requirement	Not applicable	Not applicable	Form EXP – 4.2 & 4.3;

3. Domestic Preference (ITB 33)

- 3.1 If the Bidding Data Sheet so specifies, the Purchaser will grant a margin of preference to goods manufactured in the Purchaser's country for the purpose of bid comparison, in accordance with the procedures outlined in subsequent paragraphs.
- 3.2 An individual firm is considered a domestic bidder for purposes of the margin of preference if it is constituted in the country of the Purchaser, has more than 50 percent ownership by nationals of the country of the Purchaser, and if it does not subcontract more than 30 percent of the contract price, excluding provisional sums, to foreign contractors. JVs are considered as domestic bidders and eligible for domestic preference only if the individual member firms are constituted in the country of the Purchaser, have more than 50 percent ownership by nationals of the country of the Purchaser, and the JV shall be constituted in the country of the Borrower. The JV shall not subcontract more than 30 percent of the contract price, excluding provisional sums, to foreign firms. JVs between foreign and national firms will not be eligible for domestic preference
- 3.3 The individual items quoted by domestic bidders will be classified in two groups, as follows:
- (a) **Group A:** individual items having minimum twenty (20) percent value addition through⁴ indigenous manufacturing;
 - (b) **Group B: All other items.**
- 3.4 To facilitate this classification by the Purchaser, the Bidder shall complete whichever version of the Price Schedule furnished in the Bidding Documents is appropriate provided, however, that the completion of an incorrect version of the Price Schedule by the Bidder shall not result in rejection of its bid, but merely in the Purchaser's reclassification of the bid into its appropriate bid group.
- 3.5 The Purchaser will first review the bids to confirm the appropriateness of, and to modify as necessary, the bid group classification to which bidders assigned their bids in preparing their Bid Forms and Price Schedules.
- 3.6 The bids will be compared adding, solely for comparison purposes, an amount of fifteen (15) percent of the CIP (Karachi) or Ex-Works, as the case may be, to individual item price from group B. The lowest-evaluated bid determined shall be selected for the award.

⁴ Domestic Value Added comprises domestic labor, the domestic content of materials, domestic overheads and profits from the stage of mining the raw material until final assembly

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Bid Submission Form

[The Bidder shall prepare his Bid Submission Form on a Letterhead paper specifying his name and address]

Date: _____
IPC No.: _____
Invitation for Bid No.: _____
Alternative No.: _____

To: _____

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 have no conflict of interest in accordance with ITB 4.2;
- (c) We have not been suspended nor declared ineligible by the Purchaser based on execution of a Bid Securing Declaration in the Purchaser’s country in accordance with ITB 4.4;
- (d) We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedule specified in the Schedule of Requirements the following Goods:
_____ [description of the Offered Goods to be mentioned here] _____;
- (e) The total price of our Bid, excluding any discounts offered in item (f) below is:
 - i) Total price of the Bid: _____
 - ii) In case of multiple lots, total price of each lot (N/A)
 - iii) In case of multiple lots, total price of all lots (sum of all lots) N/A
- (f) The discounts offered and the methodology for their application are:
 - i) The discounts offered are: _____
 - ii) The exact method of calculations to determine the net price after application of discounts is shown below: _____
- (g) Our bid shall be valid for a period of _____ days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (h) If our bid is accepted, we commit to obtain a performance security in accordance with ITB 42 of the Bidding Documents;
- (i) We are not participating, as a Bidder, in more than one bid in this bidding process in accordance with ITB 4.2(e), other than alternative bids submitted in accordance with ITB 13;
- (j) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (k) We understand and accept that the Purchaser reserves the right to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders; and
- (l) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption.

Name of the Bidder* _____
Name of the person duly authorized to sign the Bid on behalf of the Bidder** _____
Title of the person signing the Bid _____
Signature of the person named above _____
Date signed _____ day of _____

*: In the case of the Bid submitted by joint venture specify the name of the Joint Venture as Bidder
**: Person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid

Appendix to Bid Submission Form

Statement of Integrity, Eligibility and Social and Environmental Responsibility

Reference name of the Bid/Proposal/Contract signed¹ _____ (the “Contract”)

To: _____ (the “Contracting Authority”)

1. We recognize and accept that Agence Française de Développement (“AFD”) only finances the projects of the Contracting Authority subject to its own conditions, as set out in the Financing Agreement that directly or indirectly binds it to the Contracting Authority. The Contracting Authority retains exclusive responsibility for the preparation and implementation of the procurement process and performance of the Contract. Consequently, no legal relationship exists between AFD and our company, our joint venture, and our subcontractors. The Contracting Authority may also mean the Client, Employer or Purchaser, as the case may be, for the procurement of works, goods, plants, equipment, consulting services, or non-consulting services.

2. We hereby certify that neither we, nor any person acting on our behalf², nor any of the members of our joint venture, nor any of our subcontractors, are in any of the following situations:

2.1 Being bankrupt, wound up or ceasing our activities, having our activities administered by the courts, having entered into receivership, or being in any analogous situation arising from any similar procedure;

2.2 Having been, within the past five years, subject to a final administrative sanction, a final conviction issued by a competent authority, or any other non-court resolution³ having notably an extinctive effect on public action, either (i) in the country where we are constituted, (ii) in the country of performance of the Contract, (iii) in the context of the procurement or performance of an AFD-financed Contract, (iv) pronounced by a European Union institution, or (v) pronounced by a competent authority in France, for:

a) Prohibited Practices, as defined in Article 6.1 below, or for any other offence committed in the context of the procurement or performance of a Contract (in the event of such sanction, conviction or non-court resolution, we may attach additional information to this Statement of Integrity, such as a compliance program, showing that we (or the person acting on our behalf, the member of our joint venture, or our subcontractor) consider that this sanction, conviction or non-court resolution is not relevant in the context of the Contract, where applicable);

b) Participation in a criminal organization, terrorist offences or offences related to terrorist activities, child labor, or other offences related to human trafficking;

c) Having created an entity in a different jurisdiction with the intention of avoiding tax or social obligations, or any other legal obligation applicable in the jurisdiction of its registered office, central administration or principal place of business, or for being an entity created with the intention of avoiding such obligations;

2.3 Having been subject within the past five years to a Contract termination fully settled against us for significant or persistent breach of our contractual obligations during the performance of the Contract, unless this termination was challenged and dispute resolution is still pending or has not confirmed a full settlement against us;

2.4 Having been declared ineligible by one of the multilateral development banks signatories to the Mutual Recognition Agreement of 9 April 2010⁴ (in the event of such ineligibility, we may attach additional information to this Statement of Integrity showing that we consider that such ineligibility is not relevant in the context of the Contract, where applicable);

2.5 Not having fulfilled our fiscal obligations relating to the payments of our taxes or social contributions in accordance with the legal provisions of our country of incorporation or of the country of the Contracting Authority;

2.6 Having created falsified documents or committed misrepresentation when providing the information requested by the Contracting Authority in the context of the procurement and award process for this Contract.

¹ In the case of a Contract already signed to be refinanced.

² Directors, (including any person who is a member of the administrative management or supervisory body, or with powers of representation, decision or control), employees, or agents (be them declared or not).

³ Including the Judicial Public Interest Agreement (CJIP), a decision following an Appearance on Prior Recognition of Guilt (CPRC), a negotiated resolution agreement, or any other similar form of transaction terminating criminal proceedings.

⁴ World Bank, Inter-American Development Bank, African Development Bank, Asian Development Bank, and European Bank for Reconstruction and Development.

3. We hereby certify that neither we, nor any party acting on our behalf⁵, nor any members of our joint venture, nor any of our subcontractors, nor any of our direct or indirect shareholders, nor any of our subsidiaries acting with our knowledge or consent:

1. Are directly or indirectly subject to, controlled by a person or an entity subject to, or acting in the name or on behalf of a person or entity subject to individual sanctions measures adopted by the United Nations, the European Union and/or France;
2. Are directly or indirectly subject to, controlled by a person or an entity subject to, or acting in the name or on behalf of a person or entity subject to sectoral sanctions measures adopted by the United Nations, the European Union and/or France;
3. Are ineligible for the implementation of the Project owing to any other international sanctions measures pronounced by the United Nations, the European Union or France.

4. We hereby certify that neither we, nor any party acting on our behalf⁵, nor any of the members of our joint venture, nor any of our subcontractors, are [nor have been (in the case of refinancing for a Contract already awarded)] in any of the following situations of conflict of interest:

- 4.1 Being a shareholder controlling the Contracting Authority or a subsidiary controlled by the Contracting Authority, unless the resulting conflict of interest has been brought to the attention of AFD and resolved to its satisfaction.
- 4.2 Having business or family relations with a member of the Contracting Authority's services involved in the procurement process or the supervision of the resulting Contract, unless the resulting conflict of interest has been brought to the attention of AFD and resolved to its satisfaction;
- 4.3 Controlling or being controlled by another applicant, bidder or consultant, or being under common with another applicant, bidder or consultant, receiving subsidies from another applicant, bidder or consultant, or granting subsidies to another applicant, bidder or consultant, directly or indirectly, having the same legal representative as another applicant, bidder or consultant, maintaining direct or indirect contacts with another applicant, bidder or consultant allowing us to (i) have given and/or give access to information contained in our respective applications, bids or proposals likely to distort competition (ii) influence them, or (iii) influence the decisions of the Contracting Authority;
- 4.4 Being engaged for a consulting services mission which, by its nature, is or may be in conflict with the mission envisaged for the Contracting Authority;
- 4.5 Having prepared ourselves, being or having been associated with a natural or legal person who has prepared, specifications, terms of reference or other documents that have been used for the procurement process in question, and that contain provisions likely to favor an application, bid or proposal;
- 4.6 Having or having had access to, having prepared ourselves, being or having been associated with a natural or legal person who has or has had access to or prepared, specifications, plans, calculations, studies, or other documents that have not been communicated to all the applicants, bidders or consultants in the context of the present procurement procedure, and which thereby confer us an unfair competitive advantage;
- 4.7 In the case of a procurement procedure for works, plants, equipment or goods, having been selected ourselves or proposed to be selected (or any of our subsidiary companies having been or being proposed to be selected) to carry out supervision or inspection of the services in the context of this Contract.

5. If we are a state-owned entity or a public enterprise, to participate in a competitive procurement process, we certify that we have legal and financial autonomy and that we operate under commercial laws and regulations.

6. In the context of the procurement and performance of the Contract:

- 6.1 Neither we, nor any party acting on our behalf⁵, nor any members of our joint venture, nor any of our subcontractors, have committed or shall commit a Prohibited Practice as defined in the document entitled "AFD Group's Policy to Prevent and Combat Prohibited Practices" available on AFD's Website.⁶
- 6.2 Neither we, nor or any party acting on our behalf⁵, nor any members of our joint venture, nor any of our subcontractors, shall acquire or provide [have acquired or provided (in the case of refinancing for a Contract already awarded)] in sectors subject to an embargo by the United Nations, the European Union or France.

7. We hereby undertake to, and we undertake to ensure that any party acting on our behalf⁵, any members of our joint venture, and any of our subcontractors undertake to:

⁵ Directors, (including any person who is a member of the administrative management or supervisory body, or with powers of representation, decision or control), employees or agents (be them declared or not).

⁶ For informational purposes, this policy can be accessed via the following link: <https://www.afd.fr/en/combating-corruption>.

- 7.1 Comply with the environmental standards recognized by the international community, including the international conventions for the protection of the environment and, in particular, take all reasonable steps to avoid or limit negative effects on vegetation, biodiversity, soils, groundwater and surface water, and on persons and property resulting from pollution, noise, vibration, traffic and other effects resulting from our activities, in accordance with the laws and regulations applicable in the country of performance of the Contract.
- 7.2 Implement measures to mitigate environmental and social risks when they are indicated in the environmental and social management plan provided by the Contracting Authority, and ensure that the emissions, surface discharge and effluents produced by our activities respect the limits, specifications or requirements applicable to the Contract.
- 7.3 Respect the rights of workers related to wages, working hours, rest periods and vacations, overtime, minimum age, regular payments, compensation and benefits, in accordance with the standards recognized by the international community, including the fundamental conventions of the International Labour Organization (ILO), in accordance with the laws and regulations applicable in the country of performance of the Contract; indicate these elements in a document annexed to the employment contracts of our employees and made available to the Contracting Authority; and respect and facilitate the rights of workers to organize themselves and set up a complaints management mechanism for direct or indirect workers.
- 7.4 Implement practices for non-discrimination and equal opportunities, and ensure the prohibition of child labor and forced labor.
- 7.5 Keep a record for each member of the local staff recording the hours worked by each person, the type of work, the wages paid and the training undertaken, and ensure that these records are available at all times to be inspected by the Contracting Authority and the authorized representatives of the government, in accordance with the laws and regulations applicable to the protection of personal data in the country of performance of the Contract.

8. We, any party acting on our behalf,² the members of our joint venture, our subcontractors, our direct or indirect shareholders, and our subsidiaries, authorize AFD to conduct investigations and, in particular, inspect the documents and accounting records relating to the procurement and performance of the Contract, including, but not limited to, our internal processes and rules related to the respect of international sanctions pronounced by the United Nations, the European Union and/or France, and to have them verified auditors appointed by AFD.
9. We declare that we have paid, or that we shall pay, the commissions, benefits, fees, gratuities or charges relating to the procurement procedure or the performance of the Contract to the following third party/parties (for example, an intermediary/agent)(^{*}):

Name of beneficiary	Contact details	Purpose	Amount (indicate currency)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(^{*}): *If no amount has been paid or is to be paid, indicate “None”.*

10. We undertake to promptly inform the Contracting Authority, which shall inform AFD, of any change of circumstance regarding the sections above, including in case of any sanctions or embargo measures adopted by the United Nations, the European Union and/or France, after we have signed the present Statement.

Name: _____ In the capacity of: _____

Duly empowered to sign in the name and on behalf of:⁷ _____

Signature: _____

Dated: _____

⁷ In the case of a joint venture, insert the name of the joint venture. The person signing the bid, proposal or application on behalf of the bidder, consultant or applicant, shall attach a power of attorney from such bidder, consultant or applicant.

Form ELI-1.1: Bidder Information Form

Date: _____
IPC No. and title: _____
Page _____ of _____ pages

Bidder's name
In case of Joint Venture (JV), name of each member:
Bidder's actual or intended country of constitution: [indicate country of Constitution]
Bidder's actual or intended year of constitution:
Bidder's legal address [in country of constitution]:
Bidder's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Constitution (or equivalent documents of association) of the legal entity named above; ☐ In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1; ☐ In case of state-owned enterprise or institution, in accordance with ITB 4.3 documents establishing: a) Legal and financial autonomy; b) Operation under commercial law; c) Establishing that the Bidder is not dependent agency of the Purchaser.
2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Form ELI-1.2: Bidder's JV Information Form

(to be completed for each member of Bidder’s JV)

Date: _____
IPC No. and title: _____
Page _____ of _____ pages

Bidder’s JV name:
JV member’s name:
JV member’s country of constitution:
JV member’s year of constitution:
JV member’s legal address in country of constitution:
JV member’s authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Constitution (or equivalent documents of association) of the legal entity named above; ☐ In case of a state-owned enterprise or institution, documents establishing: a) Legal and financial autonomy; b) Operation in accordance with commercial law; and c) Absence of dependent status, in accordance with ITB 4.3. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

Form BLK – 1: Undertaking of Acceptance of and Compliance with the SOP for Blacklisting of Contractors

- A) I, _____ [Insert name and position of authorized signatory] being duly authorized by _____ [insert name of the Bidder/members of joint venture (“JV”) in case the bidder is a JV] (hereinafter referred to as the “Bidder”) to execute this undertaking of Acceptance of and Compliance with the “NGC’s SOP for Blacklisting of Contractors” attached herewith (hereinafter referred to as the “SOP”), hereby certify on behalf of the Bidder that we, _____ [insert name of the Bidder] have read and accept the provisions of the SOP.
- B) I further certify, on behalf of the Bidder, that:
- i) This Bid has been prepared and submitted in full compliance with the terms and conditions set forth in the SOP;
 - ii) We have not, directly or indirectly, taken any action which is or constitutes inter alia a corrupt, fraudulent, collusive or coercive act or practice in violation of the SOP; and
 - iii) We shall continue to comply with the terms and conditions of the SOP as and when amended, during period of evaluation of Bids and, in case we are selected for award of Contract, up to satisfactory completion of Contract.

Authorized signatory
For and on behalf of [insert name of the Bidder]

Date: _____

Form BLK – 2: Affidavit of Blacklisting by NGC/ WAPDA/ DISCOs/ any Government/ Public Department/ Donor Agencies

I, _____ [Insert name and position of authorized signatory] being duly authorized by _____ [insert name of the Bidder/members of joint venture (“JV”) in case the bidder is a JV] (hereinafter referred to as the “Bidder”) to execute this affidavit, hereby certify on behalf of the Bidder that we, _____ [insert name of the Bidder] have not been black listed by NGC/WAPDA/DISCOs/any Government/Public Department/Donor Agencies at the time of submission of bids for subject Contract.

Authorized signatory
For and on behalf of [insert name of the Bidder]

Date: _____

Form TTU-1: Undertaking for Type Test of Equipment

-- Note --

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 Type Test Policy, the {...name of bidder...} will carry out type tests as per NGC 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 reserves the right to cancel the contract agreement including encashment of performance guarantee and initiate the process of blacklisting as per NGC SOP for blacklisting.

For and on Behalf of:
Authorized Signatory:
Sign:
Date:
Stamp/Seal:

Form CON-1: Historical Contract Non-Performance, Pending Litigation and Litigation History

(to be completed by the Bidder and by each member of the Bidder’s JV)

Bidder’s Name: _____
Date: _____
JV Member’s Name _____
IPC No. and title: _____
Page _____ of _____ pages

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
☐ Contract non-performance did not occur since 1st January [insert current year number less 5] specified in Section III, Evaluation and Qualification Criteria, subclause 2.1.			
☐ Contract(s) not performed since 1st January [insert current year number less 5] specified in Section III, Evaluation and Qualification Criteria, subclause 2.1			
Year	Non-performed portion of contract	Contract Identification	Total Contract Amount (current value, currency, exchange rate and US\$ equivalent)
[insert year]	[insert amount and percentage]	Contract Identification: [indicate complete contract name/ number, and any other identification] Name of Purchaser: [insert full name] Address of Purchaser: [insert street/city/country] Reason(s) for non-performance: [indicate main reason(s)]	[insert amount]

Pending Litigation, in accordance with Section III, Qualification Criteria and Requirements			
☐ No pending litigation in accordance with Section III, Qualification Criteria and Requirements, subclause 2.3.			
☐ Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, subclause 2.3 as indicated below.			
Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), US\$ Equivalent (exchange rate)
		Contract Identification: _____ Name of Purchaser: _____ Address of Purchaser: _____ Matter in dispute: _____ Party who initiated the dispute: _____ Status of dispute: _____	

Form FIN-3.1: Financial Situation and Performance

Bidder’s Name: _____
Date: _____
JV Member’s Name _____
IPC No. and title: _____
Page _____ of _____ pages

1. Financial data

Type of Financial information in (currency)	Historic information for previous _____ years, (amount in currency, currency, exchange rate*, US\$ equivalent)		
	Year 1	Year 2	Year 3
Statement of Financial Position (Information from Balance Sheet)			
Total Assets (TA)			
Total Liabilities (TL)			
Total Equity/Net Worth (NW)			
Current Assets (CA)			
Current Liabilities (CL)			
Liquidity ratio (Current assets) / (Current liabilities)			
Information from Income Statement			
Total Revenue (TR)			
Earnings before interest, taxes, depreciation, and amortization (EBITDA)			
Indebtedness ratio (Total liabilities) / (EBITDA)			

*Refer to ITB 15 for the exchange rate

2. Financial documents

The Bidder and its parties shall provide copies of standalone financial statements for ***three (3)*** years pursuant to Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

- (a) Reflect the financial situation of the Bidder or in case of JV member, and not an affiliated entity (such as parent company or group member);

(b) Be independently audited or certified in accordance with local legislation;

(c) Be complete, including all notes to the financial statements;

(d) Correspond to accounting periods already completed and audited.

(e) Be UDIN verified in the light of ICAP directive, in case of financial statements of local bidders.
- ☐ Attached are copies of financial statements⁸ for the _____ years required above and complying with the requirements.

⁸ If the most recent set of financial statements is for a period earlier than 12 months from the date of bid, the reason for this should be justified.

Form FIN-3.2: Average Annual Turnover

Bidder’s Name: _____
Date: _____
JV Member’s Name _____
IPC No. and title: _____
Page _____ of _____ pages

Annual turnover data			
Year (last 3 years)	Amount Currency	Exchange rate* ¹	US\$ equivalent
[indicate year]	[insert amount and indicate currency]		
Average Annual Turnover * ²			

*¹ Refer to ITB 15 for the exchange rate.
*² See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2.

Form EXP-4.1: Experience

Bidder’s Legal Name: _____
JV Member’s Legal Name: _____

Date: _____
IPC No.: _____
Page _____ of _____ pages

Similar Contract No. __ /insert specific number] of [total number of contracts] __ required	Information	
Contract Identification		
Award date		
Completion date		
Role in Contract		
Total contract amount		US\$ equivalent_____
If member in a JV, specify participation in total contract amount	_____ %	US\$ equivalent_____
Purchaser’s Name:		
Address:		
Telephone/fax number:		
E-mail:		

Attached are copies of the following documents as evidence (Notarized English translation is needed if the evidence documents are not in English):

1. Relevant Contract Agreement.

2. Completion Certificates or Taking over Certificates or Performance Certificates or Operational Acceptance Certificates of the relevant Contract (s).

3. JV agreement (if any) of the relevant Contract (s), showing value and nature of participation of the Bidder.

Failure to provide the above required documents along with the Bid may cause rejection.

Form EXP – 4.1 (cont.) Experience (cont.)

Bidder’s Legal Name: _____
JV Member’s Legal Name: _____

Page _____ of _____ pages

Similar Contract No. __/insert specific number] of [total number of contracts] __ required	Information
Description of the similarity in accordance with Sub-Factor 4.1 or 4.2 of Section III:	
Amount	_____
Physical size	_____
Complexity	_____
Methods/Technology	_____
Other Characteristics	_____

Form EXP – 4.2 (a): Supply Record

Fill out one (1) form per product.

Requirements in Accordance with Criterion 4.2 of Section 3 (Evaluation and Qualification Criteria)	
(i) Product has been in production for at least years.	
(ii) Product (or equipment) has been sold a minimum of units of similar type and specification over the last five (05) years.	
(iii) Product has been in operation for a minimum of years.	
(iv) Supply Record of Last five (05) Years is attached as per Form EXP-4.2 (b)	

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder:

Form EXP – 4.2(b): Manufacturer’s Experience of Supply Record (For a period of Last 05 Years)

Sr. No.	Order Placed by (<i>full address of Purchaser</i>)	Order ⁹ Details and date	Description and quantity of ordered equipment	Value of order	Date of completion of delivery as per contract	Date of actual completion of delivery	Has the equipment been installed satisfactorily ?	Contact person along with Tele-phone No., Fax No. and email address
1.								
2.								
3.								
...								

Note:

1. The qualification documents submitted by the Bidder may not be considered for evaluation if copies of contract agreement(s) and completion certificate(s) are not provided with the Bid.

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder:

⁹ The Bidder shall specify Order No., Project Name, and Country of the Project.

Form EXP – 4.3: Production Capacity

Fill out one (1) form per product and manufacturer.

Production Capacity	
Name of Product	
Manufacturer:	Address and Nationality:
Requirements in Accordance with Criterion 4.4 of Section 3 (Evaluation and Qualification Criteria)	
Production facility 1 (include location):	
Production facility 2 (include location):	
Production facility 3 (include location):	

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder:

Form EXP – 4.4: General Information & Evidence of Manufacturer’s Capability

Bidder is to provide the following information with the bid and indicate herein its references where this information is available.

Sheet 1 of 2

Sr. No.	Information to be Supplied	Bid References
1.	Manufacturer’s • Name: • Business Address: • Contact Telephone Nos. • Fax No: • E-mail: • Country of Incorporation: • Location and address of manufacturing facilities:	
2.	Full description of factories owned and the annual manufacturing capacities of various items made therein.	
3.	Details of the factory or factories where the offered Goods are proposed to be manufactured. This description should include the facilities and capacities of the particular factories including testing facilities and the processes used in manufacturing and testing. Where parts or components are purchased from outside, the details of equipment purchased and the names and experience record of the suppliers.	
4.	Detailed description of the quality control testing and research facilities. If the Goods are manufactured under license, the name of the licensor and details of the licensing arrangements, such as the duration of the license, the facilities provided to the bidder by the licensor and whether future improvements are available or not, etc. A copy of the license agreement may be attached.	
5.	Names, qualifications and experience of the key technical personnel.	
6.	The time in years since the Manufacturer has been in this business;	
	and the time in years since he has been doing work of similar nature:	
7.	The time in years since the Goods offered are being Manufactured;	
	and the time in years for which it has been in service;	
8.	Quantity produced [Sets/Numbers/Km]: (i) : _____ (ii) : _____ (iii) 2021: _____ (iv) 2022: _____ (v) 2023: _____ (vi) 2024: _____ (vii) 2025: _____	
9.	Manufactured under own License?	Yes No
10.	Manufactured under License from: _____	
11.	Manufactured in collaboration with: _____	
12.	Has Manufacturer R&D Section?	Yes No
13.	Has Manufacturer a Quality Assurance Plan (QAP) in place?	Yes No
14.	Is the Manufacturer certified or accredited by an organization?	Yes No
15.	Name the organization and type of certification/accreditation: _____	
16.	Is the Manufacturer’s testing facilities/laboratory accredited by an organization?	Yes No
17.	Name the organization and type of certification/accreditation for the laboratory: _____	

Note:
Copies of the following documents shall be attached:
(a) Quality Assurance Plan (ISO 9001) from the Manufacturer.
(b) Accreditation certificates.

Name of the Manufacturer_____

Signed and stamped by the Manufacturer_____

Signature and Seal of the Bidder_____

Form PER – 1: SUMMARY OF PERFORMANCE
(to be submitted on original letterhead of the Bidder)

The Bidder will provide the summary of its operational experience/Performance as per following format:

Sr. No.	Order No. & Date	Designation & address of order placing authority/User	Valid Contact Information of End user	Description of Goods	Quantity	Name of line along with voltage rating where material installed	Date of Commissioning	Performance of Material/ Equipment

Notes:

1. The Bidder must provide valid contact information (i.e. E-mail and phone numbers) of end-user. The purchaser reserves the right to independently contact any of the end-user to enquire about quality of Goods supplied and this information will be considered in evaluation. In case the performance certificate is not verifiable through the given contact address and email, the bid may be rejected.
2. Bidder shall attach the copies of contract agreements and operational/performance certificate(s) from end user with this Performa. The Operational/Performance Certificate must include the following information;
 - a) Order No. & Date
 - b) Designation & address of order placing authority/User
 - c) Description of Goods
 - d) Quantity of Goods
 - e) Name of transmission line along with voltage rating where material installed
 - f) Date of Commissioning
 - g) Performance of Material/ Equipment
 - h) Date of issuing of this letter/certificate
 - i) Signature of issuing authority (this letter/certificate) with seal Name, designation, address along with phone No., e-mail and Fax of issuing authority

Performance certificate may not be considered if not provided on official letterhead of the issuing authority.

3. In case the bidder has provided Goods to NGC, they shall furnish details of such Goods in the above Performa which shall be signed by their authorized signatory along with their seal. Certificate is not required from Employer for such projects.

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder:

Form SUP – 1: Manufacturer’s Orders in Hand and its Implementation Schedule

Manufacturer should provide following information on their all contracts/orders in hand, that have been awarded or for which a letter of intent or acceptance has been received, or for contracts approaching completion and Implementation Schedule thereof:

Sr. No.	Particulars of Contracts/ Orders in hand	Order No. & Date	Name of Order Placing Authority	Order Completion Date	Remaining Contract Period (in months)	Ordered Quantity/Weight	Balance Quantity/Weight Yet to be supplied
						km/Tons/Nos.	km/Tons/Nos.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.							
2.							
3.							
4.							
5.							
6.							
7.							
Total							

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder:

Form DEV – 1: DEVIATIONS FROM TECHNICAL PROVISIONS

It is presumed that the Bidder shall not take any deviation. However, if he intends to take deviations to the specified Technical Provisions, these must be listed in the space provided below keeping in view the contents of ITB 30:

Sr. No.	Clause No. of Technical Provisions	Deviations	Remarks (including justification)

[Note: Attach additional sheets, if necessary]

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder:

Form DEV – 2: DEVIATIONS FROM CONTRACTUAL CONDITIONS

It is presumed that the Bidder shall not take any deviation. However, if he intends to take deviations to the specified Contractual/Commercial Conditions, these must be listed in the space provided below keeping in view the contents of ITB 30. However, deviations in payment terms are not permitted.:

Sr. No.	Clause No. / Section No.	Deviations	Remarks (including justification)

[Note: Attach additional sheets, if necessary]

Signature and Seal of the Bidder:

Form BNK – 1: BANK CERTIFICATE

(On the letter head of a Bank)

This is to certify that M/s..... is a reputed company with a good financial standing.

If the contract for Supply of Goods namely is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of PKR/US\$..... to meet their working capital requirements for executing the above contract.

Signature of Senior Bank Manager: _____
Name of the Senior Bank Manager: _____
Address of the Bank: _____

Stamp of the Bank

Note: Certificate should be on the letter head of the bank.

▪ **Change the text as follows for Joint Venture:**

This is to certify that M/s..... who has formed a JV with M/s.....and M/s..... for participating in this bid, is a reputed company with a good financial standing.

If the contract for supply of Goods namely is awarded to the above Joint Venture, we shall be able to provide overdraft/credit facilities to the extent of PKR/US\$.....to M/s..... to meet the working capital requirements for executing the above contract.

[This should be given by each of the JV members in proportion to their financial participation.]

Form ORG – 1: ORGANIZATION CHART

The Bidder shall provide the Organization Chart of his organization to execute the Contract.

Signature and Seal of the Bidder:

Appendix-1

SCHEDULE OF SHIPPING WEIGHTS & DIMENSIONS

Description of Material	Type of Packing	Dimensions of each Box	Weight of each Box (kgs)		Total Weight (kgs)	
			Net Weight of Material	Gross Weight with packing	Net Weight of Material	Gross Weight with packing
1	2	3	4	5	6	7

Signature and Seal of the Bidder

Appendix-2**DECLARATION OF LOCAL AGENT**

A foreign Bidder wishing to have or already having a local agent shall state the following:

1. Name of Local Agent: _____

2. Address & Telephone, Fax Number and e-mail of the Local Agent:

3. Services to be performed by the Local Agent.

- a. _____
- b. _____
- c. _____

Signature and Seal of the Bidder:

Appendix-3**METHOD OF ASSURING QUALITY OF GOODS**

The Bidder is required to submit a narrative in detail the method of assuring quality of Goods to be manufactured.

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder

Appendix-4**LIST OF QUALITY CONTROL/LABORATORY EQUIPMENT**

The Bidder will provide list of all equipment and related items, to carry out the quality control tests. The information shall include make, type, capacity, and anticipated period of utilization for all equipment which shall be in sufficient detail to demonstrate fully that the equipment will meet all requirements of the Specifications.

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder:

Appendix-5

DOMESTIC GOODS (VALUE ADDED IN PAKISTAN)

Sr. No.	Description of Indigenous Goods	Unit	Qty.	Total Price of Goods Ex-Works (Eq. PKR) *	Amount of value addition (PKR)	Domestic value added in the manufacturing cost as percentage of Ex-Works Price
1	2	3	4	5	6	7
Total in columns 5 & 6						

Note:

1. Bidders claiming eligibility for domestic preference should provide necessary documentation regarding inter alia the breakdown of the Ex-Works Price including but not limited to cost of imported raw material, duties, taxes and other incidental charges up to factory paid thereon, domestic labour, domestic raw materials & components, domestic overheads incurred, profit margin, etc. to substantiate their claim.
2. Domestic Value Addition comprises domestic labour, domestic raw materials & components, domestic overheads and profits from the stage of mining the raw material until final assembly.

* converted at the exchange rate prevailing at the date of submission of Bids.

Signature and Seal of the Manufacturer:

Signature and Seal of the Bidder:

Appendix-6

Cost Components for Computing Landed Cost
(Not Applicable)

A. Imported Goods from Group-B

1. FOB Price quoted by the Bidder
2. Sea Freight quoted by the Bidder.
3. CFR Karachi = 1 + 2
4. Insurance quoted by the Bidder
5. CIP Karachi = 3 + 4 quoted by the Bidder
6. Handling Charges @ 1% of CIP Karachi given at Sr. No. 5 above
7. Import Value = 5 + 6 for the purpose of levying Custom Duty
8. Custom Duty, calculated at applicable rate on Import Value given at Sr. No. 7 above
9. Duty Paid Value = 7 + 8
10. Sales Tax, calculated at applicable rate on Duty Paid Value given at Sr. No. 9 above
11. Duty and Sales Tax Paid Value = 9 + 10
12. Withholding Tax, calculated at applicable rate on Duty and Sales Tax Paid Value given at Sr. No. 11 above
13. L/C Charges will be taken as Nil since the same will be borne by the Bidder/Supplier
14. Clearing Charges @ 0.25% of CFR Value given at Sr. No. 3 above
15. SED calculated at applicable rate (currently 1.05%) on Import Value given at Sr. No. 7 above
16. KPT Wharfage @ PKR 140 per cubic meter or the prevailing rate
17. Cranage, Loading and Other Charges @ 0.25% of CFR Value given at Sr. No. 3 above
18. Inland Transportation Charges from Karachi Port to NGC Storage Yard Gatti, Faisalabad (including loading/unloading)
19. Cost of Imported Goods = 11 + 12 + 13 + 14 + 15 + 16 + 17 + 18
20. Less: Handling Charges given at Sr. No. 6 above (Notional Value taken for calculating assessed value for purpose of calculating Custom Duty, Sales Tax and Withholding Tax by the Custom Authority)
21. Total Deductions equal to Sr. No. 20 above
22. Net Cost/Landed Cost of Imported Goods = 19 – 21

B. Domestically Produced/Manufactured Goods from Category-I or Category-II

1. Ex-Works Pakistan Price quoted by the Bidder (including all duties and taxes levied on the components and raw materials used in the manufacturing of the offered Goods)
2. Insurance will be taken as Nil since the same will be borne by the Bidder/Supplier
3. Sales Tax, calculated at applicable rate on Ex-Works Pakistan Price given at Sr. No. 1 above
4. Cranage, Loading and Other Charges @ 0.25% of Ex-Works Pakistan Value given at Sr. No. 1 above
5. Inland Transportation Charges from Ex-works in Pakistan to NGC Storage Yard Gatti, Faisalabad (including loading/unloading)
6. Net Cost/Landed Cost of Domestically Produced/Manufactured Goods=1+2+3+4+5

Price Schedule Forms

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

Price Schedule: Goods Manufactured Outside the Purchaser's Country, to be Imported

Currencies in accordance with ITB Clause 15									Date: _____ IPC No: _____ Alternative No: _____ Page No: _____ of _____		
Item No.	Description of Goods	Country of Origin	Quantity and physical unit	Unit Price				Sales and other taxes payable per line item if Contract is awarded, in accordance with ITB 14.8(b)(ii) (see note below)	Total Price FOB per item	Total Price CIP Karachi per item	
1	2	3	4	FOB	C&F Karachi	Insurance	CIP Karachi	8=6+7	9	10=4 x 5	11=4 x 8
<u>Conductor</u>											
1.	Furnish 954 KCM ACSR Rail Conductor		448 km								

Notes:

- a. As per ITB clause 34.5, the Purchaser's evaluation of a bid will exclude and not take into account, taxes & duties, which will be payable on the goods if a contract is awarded to the Bidder.

Price Schedule: Goods Manufactured in the Purchaser's Country

Currencies in accordance with ITB Clause 15						Date: _____ IPC No: _____ Alternative No: _____ Page No: _____ of _____	
item No.	Description of Goods	Domestic Value Added in Present	Quantity and physical Unit	Unit Price (Ex-Works) <i>as per BDS clause 14.8(a)(i)</i>	Total Price per item (EX-Works)	Sales and other taxes payable per line item if Contract is awarded, in accordance with ITB 14.8(a)(ii) <i>(see note below)</i>	Total Price per item (Ex-Works) including Taxes
1	2	3	4	5	6 = 4 x 5	7	8
<u>Conductor</u>							
1.	Furnish 954 KCM ACSR 'Rail' Conductor		448 km				

Notes:

- a. As per ITB clause 34.5, the Purchaser's evaluation of a bid will exclude and not take into account, taxes, which will be payable on the goods if a contract is awarded to the Bidder.

Annexure-I**SCHEDULES OF TECHNICAL DATA / SPECIFIC GOODS DATA****GENERAL**

The bidder shall submit with the bid all the guaranteed characteristics, technical data and technical information specified herein, covering all material required by the Technical Provisions, all of which shall comply with the Bidding Documents and shall become a part thereof.

Note:

- 'A' - Purchaser's Specified Data/Parameters
- 'B' - Bidder's/Supplier's/Manufacturer's Proposed Data/Parameters
- 'C' - Remarks Supporting the Proposed Deviation in Column 'B'
- (*) - Data/Parameters to be Provided/Proposed by the Bidder/Supplier/Manufacturer in Column 'B'

SCHEDULE OF TECHNICAL DATA FOR ACSR “RAIL” CONDUCTOR

Sr. No.	Description	‘A’	‘B’	‘C’
------------	-------------	-----	-----	-----

A- GENERAL

1. Manufacturer’s Name: _____
2. Address of Manufacturing Facility _____
3. Website of Manufacturer _____
4. Name of Contact Person of Manufacturer for this Project _____
5. Email of Contact Person _____
6. Origin of Material (Makers Name & Address) _____
7. Name and Address of Galvanizer _____
8. Name and Address where testing carried out. _____
9. Standard/Specifications applied ASTM B 232/ B 232M, ASTM B230/ 230M ,ASTMB498/498M, Volume-II : Technical Specifications of this tender

B- DATA OF COMPLETE CONDUCTOR

- | | | | | |
|-----|---|-----------------------|-------|-------|
| 10. | Code name | ACSR
<u>“RAIL”</u> | _____ | _____ |
| 11. | Diameter (mm) | <u>29.61</u> | _____ | _____ |
| 12. | Cross section (mm ²) | <u>517.38</u> | _____ | _____ |
| 13. | D.C. Resistance at 20 °C (Ω/km) | <u>0.060</u> | _____ | _____ |
| 14. | Rated ultimate strength (kg) | <u>11874</u> | _____ | _____ |
| 15. | Weight (kg/km) | <u>1599</u> | _____ | _____ |
| 16. | Lay Ratio: | | | |
| | a) Aluminum: | | | |
| | i) Outer most Layer | <u>10-14</u> | _____ | _____ |
| | ii) Layer immediately beneath outside layer | <u>10-16</u> | _____ | _____ |
| | b) Steel: | | | |
| | - Outer most 6 wire layer | <u>13-28</u> | _____ | _____ |

Sr. No.	Description	‘A’	‘B’	‘C’
17.	Direction of lay (outer most layer)	<u>Right-hand</u>	_____	_____
18.	Nominal copper equivalent area (mm ²)	<u>As per Spec</u>	_____	_____
19.	Current carrying capacity, Amps (40°C ambient, 40°C rise, 0.6 m/Sec. wind and 0.5 emissivity factor)	<u>As per Spec</u>	_____	_____
20.	Volume conductivity %age of IACS	<u>61</u>	_____	_____
21.	All tests, as called for in the Technical Provisions, will be carried out within the quoted cost	<u>Yes</u>	_____	_____
C-	<u>DATA FOR ALUMINUM</u>			
22.	No. of wires	<u>45(9+14+21)</u>	_____	_____
23.	Dia of each wire (mm)	<u>3.7</u>	_____	_____
24.	a) Dia of outer most layer (mm)	<u>29.61</u>	_____	_____
	b) Dia of layer immediately beneath outer most layer (mm)	<u>*</u>	_____	_____
25.	Total cross sectional area of Aluminum wires (mm ²)	<u>483.84</u>	_____	_____
26.	Maximum Resistivity at 20°C ohm mm ² /m	<u>0.028264</u>	_____	_____
27.	Minimum ultimate tensile stress of Al strand before stranding before (kg/mm ²)	<u>16.5</u>	_____	_____
28.	Minimum ultimate tensile stress of Al strand after Stranding (kg/mm ²)	<u>15.7</u>	_____	_____
29.	Density at 20°C (kg/dm ³)	<u>2.703</u>	_____	_____
30.	Co-efficient of linear expansion /°C	<u>23x10⁻⁶</u>	_____	_____
31.	Aluminum weight (kg/km)	<u>1336</u>	_____	_____
32.	Type of joints in individual wires (during stranding)	<u>Cold pressure</u> <u>Butt welding</u>	_____	_____

Sr. No.	Description	‘A’	‘B’	‘C’
33.	Distance between two consecutive joints in complete stranded conductor (m)	<u>15</u>	_____	_____
34.	Distance over which resistance butt welding joints shall be annealed	<u>200mm</u>	_____	_____
D- <u>DATA FOR STEEL CORE</u>				
35.	No. of wires	<u>7</u>	_____	_____
36.	Dia of each wire (mm)	<u>2.47</u>	_____	_____
37.	Dia of 6 wire layer (mm)	<u>7.41</u>	_____	_____
38.	Total cross sectional area of steel wires (mm ²)	<u>33.54</u>	_____	_____
39.	Minimum ultimate tensile stress of steel wire before Stranding(kg/mm ²)	<u>133.6</u>	_____	_____
40.	Minimum ultimate tensile stress of Steel wire after stranding (kg/mm ²)	<u>126.9</u>	_____	_____
41.	Minimum stress at 1% extension (kg/mm ²)	<u>116</u>	_____	_____
42.	Minimum Elongation in 200mm			
	a) Before Stranding	<u>4%</u>	_____	_____
	b) After Stranding	<u>3.5%</u>	_____	_____
43.	Zinc coating:			
	a) Weight of Zinc coating (g/m ²)	<u>229</u>	_____	_____
	b) Process of Zinc coating	<u>Hot/electrolytic</u>	_____	_____
	c) Minimum number of one minute dip in copper sulphate solution	<u>4</u>	_____	_____
	d) Purity of Zinc	<u>99.995%</u>	_____	_____
44.	Density at 20° C (kg/dm ³)	<u>7.80</u>	_____	_____
45.	Co-efficient of linear expansion / °C	<u>11.5x10⁻⁶</u>	_____	_____
46.	Steel core weight (kg/km)	<u>263</u>	_____	_____
47.	Type of joints in base rod	<u>Resistance Butt Welding</u>	_____	_____
E- <u>REEL</u>				
48.	Construction	<u>Steel-wooden</u>	_____	_____
49.	Dimensions:			
	i) Outside width (mm)	<u>*</u>	_____	_____

Sr. No.	Description	‘A’	‘B’	‘C’
	ii) Flange dia (mm)	<u>*</u>	_____	_____
	iii) Drum dia (mm)	<u>*</u>	_____	_____
	iv) Flange thickness(mm)	<u>*</u>	_____	_____
	v) Inside width (mm)	<u>*</u>	_____	_____
	vi) Lagging thickness (mm)	<u>*</u>	_____	_____
	vii) Arbor hole dia (mm)	<u>*</u>	_____	_____
50.	Protection on inner flanges of reel	<u>Moisture resistant solid fiber board</u>	_____	_____
51.	Protection on two outer layers of Conductor	<u>Moisture resistant Paper</u>	_____	_____
52.	Protective covering for overall wrapping	<u>Moisture resistant solid fiber board</u>	_____	_____
53.	Preservative used for wood	<u>*</u>	_____	_____
54.	Length of conductor on reel (m)	<u>3200</u>	_____	_____
55.	Weight of reel with conductor (kg)	<u>*</u>	_____	_____
56.	Weight of reel without conductor (kg)	<u>*</u>	_____	_____
57.	Are the conductor reels suitable for tension stringing	<u>Yes</u>	_____	_____
58.	Is the reel drawing attached with bid	<u>Yes</u>	_____	_____

Notes:

- 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.

**Signed and Stamp by
the Manufacturer**

**Signed and Stamped by
the Bidder**

Form of Bid Security (Bank Guarantee)

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

Beneficiary: Chief Engineer (Material Procurement & Management),
National Transmission & Despatch Company Limited, (NTDC),

Invitation for Bids No: _____

Date: _____

BID GUARANTEE No.: _____

Guarantor: _____

We have been informed that _____ (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its bid (hereinafter called "the Bid") for the execution of _____ under Invitation for Bids No. _____ ("the IFB").

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

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's first demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

- (a) Has withdrawn its Bid during the period of bid validity set forth in the Applicant's Bid Submission Form ("the Bid Validity Period"), or any extension thereto provided by the Applicant; or
- (b) Having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period or any extension thereto provided by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document; or

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

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

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

/signature(s)/

Form of Bid-Securing Declaration

(NOT APPLICABLE)

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

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

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

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

To: *[complete name of Purchaser]*

We, the undersigned, declare that:

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

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

- (a) Have withdrawn our Bid during the period of bid validity specified in the Form of Bid, or any extension thereto provided by us; or
- (b) Having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity or any extension thereto accepted by us, (i) fail or refuse to execute the Contract; or (ii) fail or refuse to furnish the Performance Security, if required in accordance with the ITB.

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

Name of the Bidder* _____

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

Title of the person signing the Bid _____

Signature of the person named above _____

Date signed _____ day of _____, _____

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

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

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

Manufacturer's Authorization

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

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

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

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

To: *[insert complete name of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us:

[insert name and or brief description of the Goods],

and to subsequently negotiate and sign the Contract.

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

Moreover, we hereby certify that neither we nor any other member of our joint venture or any of our suppliers, sub-suppliers (raw materials, sub-materials,...), contractors, subcontractors, consultants or subconsultants:

- Being listed for financial sanctions by the United Nations, the European Union and/or France for the purposes of fight-against-terrorist financing or threat to international peace and security,
- Shall acquire or supply any equipment nor operate in any sectors under an embargo of the United Nations, the European Union or France

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

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

Title: *[insert title]*

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

Beneficial Ownership Declaration Performa

Declaration of Ultimate Beneficial Owners information for Public Procurement Contracts.

1. Name
2. Father's Name/Spouse's Name
3. CNIC/NICOP/Passport No.
4. Nationality
5. Residential address
6. Email address
7. Date on which shareholding, control or interest acquired in the business.
8. In case of indirect shareholding, control or interest being exercised through intermediary companies, entries or other legal persons or legal arrangements in the chain of ownership or control, following additional particulars to be provided:

1	2	3	4	5	6	7	8	9	10
Name	Legal form (company/Limited Liability Partnership/ Association of Persons/Single Member Company/Partnership Firm/Trust/Any other individual, body corporate (to be specified)	Date of Incorporation/registration	Name of registering authority	Business Address	Country	Email address	Percentage of shareholding, control or interest of BO in the legal person or legal arrangement	Percentage of shareholding, control or interest of legal person or legal arrangement in the Company	Identity of natural person who ultimately owns or controls the legal person of arrangement

9. Information about the Board of Directors (details shall be provided regarding number of shares in the capital of the company as set opposite respective names).

Beneficial Ownership Declaration Performa (cont.)

1	2	3	4	5	6	7	8
Name and surname (In Block Letters)	CNIC No. (in case of foreigner, Passport No)	Father's/ Husband's Name in full	Current Nationality	Any other Nationality (ies)	Occupation	Residential address in full or the registered/ principal office address for a subscriber other than natural person	Number of shares taken by cash subscriber (in figures and words)
			Total numbers of shares taken (in figures and words)				

10. Any other information incidental to or relevant to Beneficial Owners (s).

Name and Signature

(Person authorized to issue notice on behalf of the company)

(INTEGRITY PACT)

**DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC.
PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN
CONTRACTS HAVING WORTH Rs. 10.00 MILLION OR MORE**

Contract No. AFD-TL-03-2026

Dated _____

Contract Value: _____

Contract Title: Procurement of Transmission Line Conductor for 220kV T/Lines Associated with 500/220kV Sialkot & 220kV Arifwala Substations

..... *[Name of Bidder]* hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan (GoP) or any administrative subdivision or agency thereof or any other entity owned or controlled by GoP through any corrupt business practice.

Without limiting the generality of the foregoing, *[Name of Bidder]* represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Bidder] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[Name of Bidder] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, *[Name of Bidder]* agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt

business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Bidder] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

Name of Purchaser:

Signature:

[Seal]

Name of Bidder:

Signature:

[Seal]

Section V. Eligibility Criteria

Eligibility in AFD-Financed Procurement

1. Financing allocated by AFD to a Contracting Authority has been entirely untied since 1st January 2002. To the exception of any equipment or any sector which is subject to an embargo by the United Nations, the European Union or France, all goods, works, plants, consulting services and non-consulting services are eligible for AFD financing regardless of the country of origin of the supplier, contractor, subcontractor, consultant or subconsultant inputs or resources used in the implementation processes. The Contracting Authority means the Purchaser, the Employer, the Client, as the case may be, for the procurement of goods, works, plants, consulting services or non-consulting services.
2. A Person¹ may not be awarded an AFD-financed Contract if, on the date of submission of its Application, Bid, Proposal or Quotation, or at any time between this date and that of the corresponding Contract award, it or any of its subcontractors, Directors², employees or agents (be it declared or not):
 - 2.1 Is bankrupt, being wound up or ceasing its activities, is having its activities administered by the courts, has entered into receivership, or is in any analogous situation arising from any similar procedure;
 - 2.2 Has, within the past five years, been subject to a final administrative sanction, a final conviction issued by a competent authority, or any other non-court resolution³ having notably an extinctive effect on public action, either (i) in the country of constitution of the Person, (ii) in the country of performance of the Contract, (iii) in the context of the procurement or performance of an AFD-financed Contract, (iv) pronounced by a European Union institution or (v) pronounced by a competent authority in France, for:
 - a) Prohibited Practices⁴, or any other offence committed in the context of the procurement or performance of a Contract, subject to additional information, such as a compliance program, that such Person (or, respectively, their subcontractor, Director, employee or agent) may consider useful to provide in the context of the Statement of Integrity, that would give grounds to consider that this sanction, conviction or other resolution is not relevant in the context of the present Contract;
 - b) Participation in a criminal organization, terrorist offences or offences related to terrorist activities, child labor, or other offences related to human trafficking;
 - c) Having created an entity in a different jurisdiction with the intention of avoiding tax or social obligations, or any other legal obligation applicable in the jurisdiction where it has its registered office, its central administration or its principal place of business, or for being an entity created with the intention of avoiding such obligations;
 - 2.3 Has been subject to a termination fully settled against it within the past five years due to a significant or persistent breach of its contractual obligations during the performance of a Contract, unless (i) such termination was challenged and (ii) dispute resolution is still pending or has not confirmed a full settlement against it.;

¹ Means any natural or legal person, as well as any association or group of several such persons

² Means any natural person who is a member of the administrative, management or supervisory bodies of a legal entity, or who is vested with powers of representation, decision-making, or control over a legal entity.

³ Including the Judicial Public Interest Agreement (CJIP), a decision following an Appearance on Prior Admission of Guilt (CRPC), a negotiated resolution agreement, or any other similar form of transaction ending the proceedings.

⁴ As defined in Section VI – AFD Policy – Prohibited Practices – environmental and social responsibility

- 2.4 Has been declared ineligible by one of the multilateral development banks signatories to the Mutual Recognition Agreement of 9 April 2010.⁵ In the event of such ineligibility, the Person may attach additional information to the Statement of Integrity that would give grounds to consider that this ineligibility is not relevant in the context of this Contract;
- 2.5 Has not fulfilled their obligations relating to the payment of their taxes or social contributions, in accordance with the legal provisions of their country of incorporation, or those of the country of the Contracting Authority;
- 2.6 Has produced falsified documents or has been guilty of misrepresentation when providing the information requested by the Contracting Authority in the context of the procurement and award process for this Contract.
3. In addition, a Person may not be awarded an AFD-financed Contract if, on the date of submission of its Application, Bid, Proposal or Quotation, or at any time between this date and that of the corresponding Contract award, it or any of its subcontractors, Directors, employees, agents (be it declared or not), direct or indirect shareholders, or subsidiaries, acting with its knowledge or consent:
- 3.1 Is directly or indirectly subject to, controlled by a person or an entity subject to, or acting in the name or on behalf of a person or entity subject to individual sanctions measures adopted by the United Nations, the European Union and/or France;
- 3.2 Is directly or indirectly subject to, controlled by a person or an entity subject to, or acting in the name or on behalf of a person or entity subject to sectoral sanctions measures adopted by the United Nations, the European Union and/or France;
- 3.3 Is ineligible for the implementation of the Project by way of any other international sanctions measures pronounced by the United Nations, the European Union or France.
4. State-owned entities may compete only if they can establish that they (i) are legally and financially autonomous, and (ii) operate under commercial law. To be eligible, a state-owned entity shall establish to AFD's satisfaction, through all relevant documents, including its Charter and other information AFD may request, that it: (i) is a legal entity separate from their state (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to their state, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt.

⁵ World Bank, Inter-American Development Bank, African Development Bank, Asian Development Bank and European Bank for Reconstruction and Development.

Section VI. AFD Policy - Corrupt and Fraudulent Practices– Social and Environmental Responsibility

1. Prohibited Practices

The Contracting Authority and the suppliers, contractors, subcontractors, consultants or subconsultants shall respect the highest ethical principles during the procurement and performance of Contracts. The Contracting Authority means the Purchaser, the Employer, the Client, as the case may be, for the procurement of goods, works, plants, consulting services or non-consulting services.

For the purpose of this provision, AFD introduces the concept of Prohibited Practices, referring to acts as defined in the “General Policy to Prevent and Combat Prohibited Practices”¹ available on the AFD website and in the document titled “Procurement Guidelines for AFD-Financed Contracts in Foreign Countries”².

By signing the Statement of Integrity the suppliers, contractors, subcontractors, consultants or subconsultants declare that they have not engaged, nor will they engage, in any Prohibited Practices during the procurement and execution of the Contract.

A Person³ or any of its subcontractors, Directors⁴, employees or agents (be it declared or not), may not be awarded an AFD-financed Contract if on the date of submission of its Application, Bid, Proposal or Quotation, or at any time between this date and that of the corresponding Contract award, it has engaged in a Prohibited Practice, directly or by means of an agent (be it declared or not), for the purpose of being awarded this Contract.

Moreover, AFD requires including in the procurement documents and AFD-financed contracts a provision requiring that applicants, bidders, suppliers, contractors, subcontractors, consultants or subconsultants will permit AFD to investigate, including the inspection of their accounts and records relating to the procurement process and performance of the AFD-financed contract, and to have them audited by auditors appointed by AFD.

For the purpose of detecting and effectively combating Prohibited Practices, AFD has established a whistleblowing mechanism open to third parties: anyone can thereby directly report an allegation of a Prohibited Practice to AFD’s Investigations Function, either:

- By e-mail, to the address investigationsGroupeAFD@tutanota.com,
or
- By sending a letter to AFD’s Compliance Department, 5 rue Roland Barthes, 75012 Paris.

¹ For more information, this Policy is available on the following link : <https://www.afd.fr/en/combating-corruption>

² For more information, the Procurement Guidelines are available on the following link : <https://www.afd.fr/en/bid-invitations-and-procurement>

³ Means any natural or legal person, as well as any association or group of several such persons.

⁴ Means any natural person who is a member of the administrative, management or supervisory bodies of a legal entity, or who is vested with powers of representation, decision-making, or control over a legal entity.

2. Environmental, Social, Health and Safety (ESHS) Responsibility, and Security

In order to promote sustainable development, AFD seeks to ensure that internationally recognized ESHS standards are complied with in the Contracts it finances. Consequently, the applicants, bidders, consultants and their subcontractors shall undertake, by signing the Statement of Integrity, to:

- a) Comply with the environmental standards recognized by the international community, including the international conventions for the protection of the environment and, in particular, take all reasonable steps to avoid or limit negative effects on vegetation, biodiversity, soils, groundwater and surface water, and on persons and property resulting from pollution, noise, vibration, traffic and other effects resulting from our activities, in accordance with the laws and regulations applicable in the country of performance of the Contract.
- b) Implement measures to mitigate environmental and social risks when they are indicated in the environmental and social management plan provided by the Contracting Authority, and ensure that the emissions, surface discharge and effluents produced by our activities respect the limits, specifications or requirements applicable to the Contract.
- c) Respect the rights of workers related to wages, working hours, rest periods and vacations, overtime, minimum age, regular payments, compensation and benefits, in accordance with the standards recognized by the international community, including the fundamental conventions of the International Labour Organization (ILO), in accordance with the laws and regulations applicable in the country of performance of the Contract; indicate these elements in a document annexed to the employment contracts of our employees and made available to the Contracting Authority; and respect and facilitate the rights of workers to organize themselves and set up a complaints management mechanism for direct or indirect workers.
- d) Implement practices for non-discrimination and equal opportunities, and ensure the prohibition of child labor and forced labor.
- e) Keep a record for each member of the local staff recording the hours worked by each person, the type of work, the wages paid and the training undertaken, and ensure that these records are available at all times to be inspected by the Contracting Authority and the authorized representatives of the government, in accordance with the laws and regulations applicable to the protection of personal data in the country of performance of the Contract.

PART 2 – Supply Requirements

Section VII. Schedule of Requirements

Contents

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1. List of Goods and Delivery Schedule

A. Delivery and Completion Schedule For Goods supplied from Outside the Purchaser's Country

Item No.	Description of Goods	Qty	Unit	Named place of Destination	Required Delivery Period for supply of Goods ¹ CIP (Karachi) / Ex-Works ^{2,3}	Bidder's offered Delivery Period for supply of Goods at named place of destination
1	ACSR Rail Conductor	448	km	Karachi	150 days	

Notes:

1. The delivery period shall start from the date of signing of the Contract Agreement.

SEAL & SIGNATURE OF THE BIDDER

B. Delivery and Completion Schedule
For Goods supplied from Within the Purchaser's Country

Item No.	Description of Goods	Qty	Unit	Required Delivery Period for supply of Goods ¹ Ex-Works	Bidder's offered Delivery Period for supply of Goods Ex-Works
1	ACSR Rail Conductor	448	km	150 days	

Notes:

1. The delivery period shall start from the date of signing of the Contract Agreement.

SEAL & SIGNATURE OF THE BIDDER

PART-A: SPECIAL PROVISIONS

SP-01. SCOPE OF SUPPLY

The scope covers supply of ACSR Rail Conductor by Supplier(s) includes but not limited to design, manufacturing & testing, furnishing, insuring, marine transportation & delivering the material. The material is required for the construction of transmission lines associated with 500/220kV Sialkot & 220kV Arifwala Substations.

SP-02. DRAWINGS

SP-02.1 Drawings in Contract

SP-02.1.1 Specification Drawings

The specification drawings contained in the Contract Documents show the Specifications and Scope of material to be supplied by the Supplier.

SP-02.1.2 Supplier's Bid Drawings

The bid drawings are the drawings prepared by the Supplier for bidding purposes, and shall be part of his Bid.

The specification drawings and Supplier's bid drawings shall not be used for manufacturing of Goods unless specific instructions for such use are given by the Engineer.

SP-02.1.3 Approved Drawings

The manufacturing shall be carried out in accordance with the approved drawings/data.

SP-02.2 Drawings and Other Data to be furnished by the Supplier

All drawings shall be in English language and all dimensions shall be in Metric System. Symbols shall be in accordance with IEC standards. All drawings shall be clearly marked "National Grid Company of Pakistan Limited (NGC)-(specify item name) _____". All drawings/data submitted for approval shall conform to ISO paper sizes A3 or A4.

The Supplier shall submit detailed drawings/data for approval by the Engineer, in accordance with provisions of Contract, and the additional requirements specified in the respective Clauses hereof. The drawings/data shall be complete in all respects, shall have been reviewed and checked by the

Supplier and shall be submitted in due time and in logical order to facilitate proper coordination.

SP-02.2.1 Goods Drawings and Specific Goods Data

The Supplier shall submit the following drawings and Specific Goods Data within fifteen (15) days after issuance of Letter of Acceptance for approval of the Engineer, together with overall and handling weights and dimensions of the Goods to be provided under the Contract.

- (i) Detailed drawings and Specific Goods Data sheets for the Equipment.
- (ii) Packing details & drawings.
- (iii) Test program indicating arrangement & details of all tests to be carried out and their tentative schedule.
- (iv) Any other information and drawing which may be required by the Engineer.

The time for approval of the Supplier's above mentioned submissions shall be fourteen (14) working days after its receipt thereof.

SP-02.2.2 Data other than Drawings

All applicable requirements of this Clause and mentioned elsewhere in this document with reference to drawings to be prepared by the Supplier shall apply equally to catalogues, cuts, illustrations, printed specifications, or other data submitted for approval.

SP-02.3 Submission and Approvals

SP-02.3.1 Drawings for Approval

Drawings for approval, shall be distributed through international couriers to addresses and in number as specified in Sub-Clause SP-02.3.6 hereof.

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

SP-02.3.2 Approval of Drawings/Data

- (1) All changes will be made and will be marked "APPROVED", "APPROVED EXCEPT AS NOTED" or "RETURNED FOR CORRECTION" on the relevant drawings/data. One print will be returned to the Supplier. The other shall be retained by the Engineer for his own use and for the use of Procuring

Agency and shall serve as the Master Copy and shall prevail in case of any doubt or discrepancy subsequently arising.

- (2) If the drawing/data is returned to the Supplier stamped "APPROVED" he may immediately proceed with the manufacturing of Goods. Any drawing/data marked "APPROVED" by the Engineer shall be known as an "Approved Drawing".
- (3) If the drawing/data is returned to the Supplier stamped "APPROVED EXCEPT AS NOTED" he may proceed with the manufacturing of Goods taking into account the corrections and comments noted on the drawing/data. The Supplier shall revise the drawings/data as required and resubmit them in the same routine as before for record purposes.
- (4) If the drawing/data is returned to the Supplier stamped "RETURNED FOR CORRECTION" he shall not proceed with the manufacturing of Goods but shall make the changes and corrections or prepare new drawings/data and resubmit the revised drawing/data to the Engineer for approval at no change in price or Delivery & Completion Schedule. Resubmitted prints and calculations will be subject to the same routine as stated before. Time required for such revisions and re-submittals of drawings/data or calculations will not entitle the Supplier to any extension in Contractual Completion time.
- (5) If the Supplier does not agree with exceptions taken by the Engineer, the Supplier shall state in his letter of re-submittal his reasons for not complying with the Engineer's exceptions. Revision number and date and description of change shall be shown on all drawings or calculations revised.

SP-02.3.3 Manufacturing Prior to Approval

Any manufacturing/fabrication of Goods done prior to the approval of drawings & data shall be at the Supplier's risk. The Engineer shall have the right to reject the said Goods if not conforming to required specifications and drawings or to request additional details and to require the Supplier to make any change(s) which are necessary to conform to the provisions and intent of these Specifications and such changes shall be made without additional cost to Procuring Agency. The approval of the drawings & data by the Engineer shall not be construed as a complete check but will indicate only that the detailing is satisfactory. Approval by the Engineer of the Supplier's drawings & data shall not be held to relieve the Supplier of the obligations to meet all the requirements of these Specifications or of the responsibility for the

correctness of the Supplier's drawings & data or for correct fit and use of assembled Goods furnished by the Supplier.

SP-02.3.4 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.

SP-02.3.5 Approved Drawings/Data and Revisions

All approved drawings/data shall form part of the Contract. If revisions are required after a drawing/data has been approved, the Supplier shall furnish for approval additional copies specified for the initial submission, prior to such revision(s).

SP-02.3.6 Distribution of Drawings and Documents

The drawings and documents shall be submitted to the Engineer/ Procuring Agency within the time given in the Contract or within such reasonable time as the Engineer may require, and in the number as specified hereunder:

Documents	Engineer		Procuring Agency / Project Director	Total
	Head Office	Site Office		
Drawings for approval	3	-	1	4
Approved Drawings	2	2	1	5
Schedules, specifications and other documents/data	2	1	1	4
Record (As-Built) Drawings and Data	2	-	4	6
Reproducible transparency Record (As-Built) Drawings	1	-	1	2
Record (As-Built) Drawings on Computer compact diskette (CD/DVD) using AutoCAD software	1	-	1	2
Codes and standards	1	-	1	2
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
Correspondence with Procuring Agency	1	1	1	3
Correspondence with Head office of Engineer	1	1	1	3

SP-03 STANDARDS AND TYPICAL DESIGN**SP-03.1 General**

The Specifications cite or imply International Standards and typical design for Goods. Other equivalent standards and typical designs are equally acceptable provided that they in no way detract from the quality, safety, operation ability of the Goods furnished. However, when standards or typical design other than those cited or implied are offered by a bidder, he shall set forth in his Contract 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 no alternatives are set forth by the bidder, it will be assumed that offered Goods will be in accordance with the International Standards and typical design as cited or implied in the Specifications.

Where the documents provide requirements for manufacturing by specifying a standard such as, for example, one of the international standard organizations which have 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 Engineer are at least equal to the requirements of the standards specified. The bidder may propose an equivalent standard other than that specified, in which case he shall submit the proposed standard and all other information required by the Engineer and shall submit written demonstration that his proposed standard is equivalent 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 bid.

SP-03.2 Applicable Standards and Codes

- (1) All Goods 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, approval of the Engineer may be given to use other national standards prevalent in the country of manufacture. No departure from the standards specified will be considered after

the Contract has been awarded unless specific authorization is requested in writing from the Engineer.

SP-04 PORT OF ENTRY AND DISEMBARKATION

The Supplier would have the option to use either Karachi Port or Port Muhammad Bin Qasim or both or any other seaport in Pakistan 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

SP-05 PACKING AND MARKING

As discussed in Section-IX Clause 23.2: Part-II: Special Conditions of Contract

SP-06 TRANSPORTATION OF GOODS

SP-06.1 General

The Supplier outside from the Procuring Agency's country shall transport the Goods from its place of manufacture or origin to the Procuring Agency's port and insurance thereof from its place of manufacturer up to storage site/warehouse and shall be solely responsible for selection of routes and carriers, and expediting in order that all shipments are safely and expeditiously transported and arrived at Karachi Sea Port. The Supplier shall carry out insurance from its warehouse to the Procuring Agency's warehouse / designated site and shall cover all risks including inland transportation from Karachi/ any other port in the Procuring Agency's country to its warehouse / designated site.

SP-06.2 Shipping

The shipment of all the consignments relating to Goods may be arranged by the Supplier through vessels of any nationality. For working out a proper schedule to match the completion of delivery, the Supplier will keep a

continuous liaison with the Agent of the respective shipping line within the country of origin.

SP-07 SHOP INSPECTION AND ORDERS FOR GOODS

SP-07.1 Inspection

Unless otherwise authorized by the Engineer no Goods shall be shipped from its point of original manufacture or final shop assembly before it has been inspected and approved by the Engineer.

SP-07.2 Goods Orders

The Supplier shall, if requested, provide the Engineer with unpriced copies of the Supplier's purchase orders for Goods or approved sub-Contracted supply at the time any such orders are placed. The Supplier shall also provide the Engineer with any other relevant information requested to ensure proper expediting and scheduling of the deliveries.

SP-07.3 Acceptance of Materials

The approval by the Engineer of any Goods prior to shipment shall in no way relieve the Supplier of any of his responsibilities for meeting all of the requirements of the Specifications and shall not prevent subsequent rejection if such Goods are later found to be defective or not conforming to the Specifications.

SP-08 SCHEDULE AND MEETINGS

SP-08.1 Schedule

- (1) The Supplier shall manufacture & supply the Goods in accordance with the dates/periods specified in Delivery and completion Schedule Section VII. The Supplier shall regularly review the Schedule and notify the Engineer promptly of any revisions which in his view may be required from time to time.
- (2) Each group of Goods shall be completely delivered. The Supplier shall keep the Engineer informed of the progress of the Contract and notify the Engineer approximately eight (8) weeks in advance, in writing, as to when the Goods will be ready for inspection and for shipping and shall supply lists covering each consignment in sufficient detail to enable the Engineer to check the contents of the packages.

- (3) In preparing the Delivery and Completion Schedule, the Supplier shall fully take into account the requirements (and possibilities) for ocean (or air) freight. Progress of all shipments shall be continuously monitored and the Supplier shall provide staff or agents to expedite all shipments to ensure compliance with the approved Delivery Schedule.

SP-08.2 Meetings

- (1) Soon after the date of Award of Contract, the Engineer will, with the approval of Procuring Agency require a meeting with Procuring Agency and the Supplier at a place mutually agreed upon, to discuss scheduling of drawings & data, manufacture, testing & inspection, scheduled sequences of delivery and other similar problems which may be pertinent to the completion of the Project.
- (2) From time to time during the execution of the Contract, the Engineer may call meetings as deemed necessary for the purpose of progress monitoring and proper execution of the Contract.
- (3) As required by the Engineer, responsible representatives of the Supplier shall attend such meetings.
- (4) All expenses incurred by the Supplier for attending such meetings shall be borne by the Supplier and shall not be reimbursable.

SP-09 COMMUNICATIONS WITH THE ENGINEER

Pursuant to the definition of Engineer, Sub-Clause 1.1(q) of the Particular Conditions of Contract, the Engineer has established a Project Office at Lahore to which the Supplier shall address all communications for the approval of drawings and other submittals etc., as follows:

Engineer:

Director General (Transmission Engineering), NGC formerly Chief Engineer (T/L Design) NGC,

Address: 106-Wapda House, Mall Road, Lahore.

Tel: +92-42-99202615

Fax: +92-42-99202502

Email: ce.tld@ngc.gov.pk

PART-B: TECHNICAL SPECIFICATIONS

1.0 GENERAL

- 1.1 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.
- 1.2 In case of contradiction between the technical requirements mentioned herein and relevant specifications appended with the tender, the former shall prevail.
- 1.3 The specific reference in these specifications and documents to any material/equipment by brand name, make or catalogue number shall be constructed as establishing standards of quality and performance and not as limiting competition. However, Bidders may offer other similar material/equipment provided they meet the specified standard, design and performance requirements. The Bidder shall furnish adequate technical information about such alternative material/equipment to enable Procuring Agency to determine its acceptability. Procuring Agency shall be the sole judge on the acceptability or otherwise of such alternative material/ equipment.
- 1.4 The Bidder shall note that standards for workmanship, material and equipment and reference to brand names or catalogue numbers designated by Procuring Agency in its Technical Specifications are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brands name and/or catalogue numbers in its Bid, provided that it demonstrates to Procuring Agency satisfaction that the substitutions are substantially equivalent or superior to those designed in the Technical Specifications.
- 1.5 The contract shall be executed in strict conformity with the specifications and/or Drawings given or mentioned in this section and the supplier shall do no 'Work' without proper specifications, instructions and/or Drawings.
- 1.6 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 supplier to be indefinite or unclear, the same shall be

referred to the Procuring Agency whose written explanation and/or clarification shall be obtained before proceeding with the work.

- 1.7 Approval by the Procuring Agency does not relieve the Manufacturer/Supplier of his responsibility to do the work in accordance with the Contract.
- 1.8 The Manufacturer/ Supplier shall be responsible for any discrepancies, errors omissions in any drawings or other particulars supplied by him whether the Procuring Agency has approved such drawings or particulars or not.
- 1.9 All drawings and documents furnished by the Manufacturer/Supplier in accordance with the Contract shall become the property of the Procuring Agency.
- 1.10 Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods 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.
- 1.11 NGC reserves the right to delete or increase/decrease any item from the Lot before award of contract.

2. LANGUAGE

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.

3. TYPE TESTS AS APPLICABLE

- 3.1 The offered equipment shall be type tested as per revised NGC type test policy and in accordance with relevant provisions of the specifications. The said policy is attached with Volume-II of this bidding document.
- 3.2 The bidder shall furnish type test certificates for the said equipment along with the bid. In case of non-submission of type test reports or if type test reports supplied are not to the satisfaction of the Engineer, the bidder shall consent to perform all type tests/special

tests on the equipment in accordance with the NGC type test policy within the quoted bid price and stipulated delivery time. The type tests shall be witnessed by two authorized representatives/inspectors, nominated by the Engineer. All expenses in connection with this witnessing shall be borne by the bidder, as per bidding document Section-IX: Special Conditions of Contract, SCC Clause-26.

All type test certificates/reports, reference list, etc. shall be in English language.

- 3.3 All equipment being supplied shall confirm to type test requirements and shall be subject to routine tests in accordance with requirements stipulated under respective sections.

4. DETAILED TECHNICAL SPECIFICATIONS

- 4.1 The following technical specifications, appended at the end of this bidding document, shall apply. The requirements indicated in subsequent clauses shall also have to be met. In case any requirements given in the said clauses differs from that given in the main specification, the requirements given herein shall prevail.

The detailed technical specifications are provided in **Volume-II** of this bidding document.

5. PRE-DELIVERY / PRE-SHIPMENT INSPECTION

All the machinery /equipment /goods shall be subject to pre-delivery /pre-shipment inspection as per relevant specification and contract conditions.

6. SCHEDULE OF TECHNICAL DATA (SPECIFIC GOODS DATA)

Schedules of Technical Data/ Specific Goods Data regarding equipment/ material be supplied are provided in form attached as **Annexure-I** to this bidding document. The bidder is required to fill the requisite schedule of technical data and submit the same with the bid. A bid without Schedule of Technical Data/ Specific Goods Data (filled in) shall be considered as non-responsive.

All allied equipment/material offered as a part of main equipment may have (preferably) values over and above IEC ratings/values if not specified in NGC specifications.

PART 3 - Contract

Section VIII. General Conditions of Contract

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Section VIII. General Conditions of Contract

1. Definitions

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

- (a) “AFD” means the Agence Française de Développement;
- (b) “Contract” means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein;
- (c) “Contract Documents” means the documents listed in the Contract Agreement, including any amendments thereto;
- (d) “Contract Price” means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract;
- (e) “Day” means calendar day;
- (f) “Completion” means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract;
- (g) “GCC” means the General Conditions of Contract;
- (h) “Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract;
- (i) “Purchaser’s Country” is the country specified in the Special Conditions of Contract (SCC);
- (j) “Purchaser” means the entity purchasing the Goods and Related Services, as specified in the SCC;
- (k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract;
- (l) “SCC” means the Special Conditions of Contract;
- (m) “Subcontractor” means any natural person, private or state entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier;

- (n) “Supplier” means the natural person, private or state entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement;
 - (o) “The Project Site,” where applicable, means the place named in the SCC.
- 2. **Contract Documents**
 - 2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.
- 3. **Fraud and Corruption**
 - 3.1 The AFD requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Appendix 1 to the SCC.
- 4. **Interpretation**
 - 4.2 If the context so requires it, singular means plural and vice versa.
 - 4.3 Incoterms
 - (a) Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms;
 - (b) The terms CIP and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms specified in the SCC and published by the International Chamber of Commerce in Paris, France.
 - 4.4 Entire Agreement

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

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.
 - 4.6 Nonwaiver
 - (a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract;

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

4.7 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.

5. Language

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

6. Joint Venture, Consortium or Association

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

7. Eligibility

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

1. Notices

- 8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the SCC. The term "in writing" means communicated in written form with proof of receipt.
- 8.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

9. Governing Law

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

- | | |
|---|--|
| 10. Settlement of Disputes | <p>10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.</p> <p>10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.</p> <p>10.3 Notwithstanding any reference to arbitration herein,</p> <p style="padding-left: 40px;">(a) The parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and</p> <p style="padding-left: 40px;">(b) The Purchaser shall pay the Supplier any monies due the Supplier.</p> |
| 11. Inspections and Audit by the AFD | <p>11.1 The Supplier shall keep, and shall make all reasonable efforts to cause its Subcontractors to keep accurate and systematic accounts and records, in respect of the Goods in such form and details as will clearly identify relevant time changes and costs.</p> <p>11.2 The Supplier shall permit, and shall cause its Subcontractors and consultants to permit, the AFD and/or persons appointed by the AFD to inspect the Supplier's offices and all accounts and records relating to the performance of the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the AFD if requested by the AFD.</p> |
| 12. Scope of Supply | <p>12.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.</p> |
| 13. Delivery and Documents | <p>13.1 Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule of Requirements. The details of shipping and other documents to be furnished by the Supplier are specified in the SCC.</p> |
| 14. Supplier's Responsibilities | <p>14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 12, and the Delivery and Completion Schedule, as per GCC Clause 13.</p> |
| 15. Contract Price | <p>15.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices</p> |

- quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the SCC.
- 16. Terms of Payment**
- 16.1 The Contract Price, including any Advance Payments, if applicable, shall be paid as specified in the SCC.
- 16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.
- 16.3 Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.
- 16.4 The currencies in which payments shall be made to the Supplier under this Contract shall be those in which the bid price is expressed.
- 16.5 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period set forth in the SCC, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate shown in the SCC, for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.
- 17. Taxes and Duties**
- 17.1 For goods manufactured outside the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's Country.
- 17.2 For goods manufactured within the Purchaser's country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.
- 17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser's Country as specified in the SCC, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.
- 18. Performance Security**
- 18.1 The Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount specified in the SCC.
- 18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.
- 18.3 The Performance Security shall be denominated in the currency(ies) of the Contract, or in a freely convertible currency acceptable to the Purchaser; and shall be in one of the format stipulated by the

Purchaser in the SCC, or in another format acceptable to the Purchaser.

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

19. Copyright

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

20. Confidential Information

- 20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.
- 20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.
- 20.3 The obligation of a party under GCC Sub-Clauses 20.1 and 20.2 above, however, shall not apply to information that:
- (a) The Purchaser or Supplier need to share with the AFD or other institutions participating in the financing of the Contract;
 - (b) Now or hereafter enters the public domain through no fault of that party;
 - (c) Can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or
 - (d) Otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
- 20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto

- prior to the date of the Contract in respect of the Supply or any part thereof.
- 20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.
- 21. Subcontracting**
- 21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the bid. Such notification, in the original bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.
- 21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.
- 22. Specifications and Standards**
- 22.1 Technical Specifications and Drawings
- (a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VII, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods' country of origin;
- (b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser;
- (c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.
- 23. Packing and Documents**
- 23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their named place of destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods' named place of destination and the absence of heavy handling facilities at all points in transit.
- 23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional

requirements, if any, specified in the **SCC**, and in any other instructions ordered by the Purchaser.

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| 24. Insurance | 24.1 Unless otherwise specified in the SCC , the Goods supplied under the Contract shall be fully insured—in a freely convertible currency from an eligible country—against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the SCC . |
| 25. Transportation | <p>25.1 Unless otherwise specified in the SCC, responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.</p> <p>25.2 The Supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:</p> <ul style="list-style-type: none"> (a) Performance or supervision of on-site assembly and/or start-up of the supplied Goods; (b) Furnishing of tools required for assembly and/or maintenance of the supplied Goods; (c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods; (d) Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and (e) Training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods. <p>25.3 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.</p> |
| 26. Inspections and Tests | <p>26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in the SCC.</p> <p>26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, and/or at the Goods' named place of destination, or in another place in the Purchaser's Country as specified in the SCC. Subject to GCC Sub-Clause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.</p> <p>26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 26.2, provided that the Purchaser bear all of its own costs and</p> |

expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

- 26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
- 26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications, codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.
- 26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
- 26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 26.4.
- 26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.

27. Liquidated Damages

- 27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in those SCC. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. Warranty

- 28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent

improvements in design and materials, unless provided otherwise in the Contract.

- 28.2 Subject to GCC Sub-Clause 22.1(b), the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of named place of destination.
- 28.3 Unless otherwise specified in the SCC, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the named place of destination indicated in the SCC, or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.
- 28.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.
- 28.5 Upon receipt of such notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 28.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the SCC, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

29. Patent Indemnity

- 29.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:
 - (a) The installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and
 - (b) The sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced

thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

- 29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.
- 29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.
- 29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.
- 29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30. Limitation of Liability

- 30.1 Except in cases of criminal negligence or willful misconduct,
 - (a) The Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and
 - (b) The aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the supplier to indemnify the purchaser with respect to patent infringement

31. Change in Laws and Regulations

- 31.1 Unless otherwise specified in the Contract, if after the date of 28 days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's country where the Site is

located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

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| 32. Force Majeure | <p>32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.</p> <p>32.2 For purposes of this Clause, “Force Majeure” means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.</p> <p>32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.</p> |
| 33. Change Orders and Contract Amendments | <p>33.1 The Purchaser may at any time order the Supplier through notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:</p> <ul style="list-style-type: none"> (a) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser; (b) The method of shipment or packing; (c) The place of delivery; and (d) The Related Services to be provided by the Supplier. <p>33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier’s performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight</p> |

(28) days from the date of the Supplier's receipt of the Purchaser's change order.

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

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

34. Extensions of Time

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

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 27, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. Termination

35.1 Termination for Default

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

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

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

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

(b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those

undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

35.2 Termination for Insolvency

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

35.3 Termination for Convenience

- (a) The Purchaser, by notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective;
- (b) The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
 - (i) To have any portion completed and delivered at the Contract terms and prices; and/or
 - (ii) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

36. Assignment

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

37. Export Restriction

- 37.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, which arise from trade regulations from a country supplying those products/goods, systems or services, and which substantially impede the Supplier from meeting its obligations under the Contract, shall release the Supplier from the obligation to provide deliveries or services, always provided, however, that the Supplier can demonstrate to the satisfaction of the Purchaser and of the AFD that it has completed all formalities in a timely manner, including applying for permits, authorizations and

licenses necessary for the export of the products/goods, systems or services under the terms of the Contract. Termination of the Contract on this basis shall be for the Purchaser's convenience pursuant to Sub-Clause 35.3.

Section IX. Special Conditions of Contract

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

GCC 1.1(i)	The Purchaser's country is: Islamic Republic of Pakistan.
GCC 1.1(j)	The Purchaser is: Director General (Procurement) , <i>formerly Chief Engineer (Material Procurement & Management)</i> , National Grid Company of Pakistan Limited, (NGC) 8th Floor, Shaheen Complex, Egerton Road, Lahore-Pakistan. Telephone No. 92-42-99202597; Fax No. +92-42-99202173 E-mail address: dg.procurement@ngc.gov.pk
GCC 1.1 (o)	The Project Site(s) are: Sialkot, Sahuwala, Arifwala in Punjab Province.
GCC 1.1 (p)	The definition is inserted after 1.1 (o) The Engineer is Director General (Transmission Engineering) NGC <i>formerly Chief Engineer (T/L Design) NGC</i> , 106-WAPDA House, Shahra-e-Quaid-Azam, Lahore or any other Competent Person appointed by the Procuring Agency and notified to the Supplier, to act in replacement of the Engineer. Provided always that except in cases of professional misconduct, the outgoing Engineer is to formulate his certifications/recommendations in relation to all outstanding matters, disputes and claims relating to the execution of the Contract during his tenure.
GCC 4.2	The version of Incoterms shall be: 2020 In these Bidding Documents, when using "CIP (Karachi)" and not referring to the transfer of risk, the term "delivery" shall be interpreted as the date and place where the Goods and Related Services arrive at the named place of destination, and this date shall be reflected in the Delivery and Completion Schedule
GCC 5.1	The governing and communication language shall be English The language for translation of supporting documents and printed literature is: English. Translation shall be notarized.
GCC 7.1	Goods and services from countries under embargo from France, the European Union or the United Nations are not eligible.

GCC 8.1	For <u>notices</u>, the Purchaser's address shall be: Director General (Procurement), <i>formerly Chief Engineer (Material Procurement & Management)</i>, National Grid Company of Pakistan Limited, (NGC) 8th Floor, Shaheen Complex, Egerton Road, Lahore-Pakistan. Telephone No. 92-42-99202597; Fax No. +92-42-99202173 E-mail address: dg.procurement@ngc.gov.pk
GCC 9.1	The governing law shall be the Laws of Islamic Republic of Pakistan.
GCC 10.2	The formal mechanism for the resolution of disputes shall be: For a contract with a Foreign Supplier: In case of a dispute between the Purchaser and the Supplier, the dispute shall be settled by international arbitration conducted in accordance with the Arbitration Rules of the Singapore International Arbitration Centre. The arbitration procedure shall be administered by the Singapore International Arbitration Centre. Place of Arbitration: Singapore For a contract with a Domestic Supplier: In case of a dispute between the Purchaser and the Supplier, the dispute shall be settled by arbitration in accordance with the provisions of the local arbitration procedures in the Purchaser's country. Place of Arbitration shall be Lahore, Pakistan.
GCC 12.1	Scope of Supply The scope of supply of Goods is described in Volume-1 Section-IV (Bidding Forms: Price Schedules), Section-VII (Schedule of Requirements), including Specifications-Technical Provisions (Volume-II)
GCC 13.1	<u>For Goods supplied from abroad:</u> Upon shipment the foreign supplier shall notify the Purchaser and the Insurance Company by fax/cable the full details of the shipment, including Contract number, description of Goods, quantity, the vessel, the bill of lading number and date, port of loading, date of shipment, port of discharge, etc. The Supplier shall submit set of the following non-negotiable documents to the Purchaser, with a copy to the Insurance Company: i) Original and four (04) copies of the Supplier's invoice showing Goods description, quantity, unit price and total amount. ii) Original and four (04) copies of clean on-board bill of lading marked "freight prepaid". iii) Original and four (04) copies of the packing list identifying contents of each package. iv) Original and four (04) copies of the Insurance certificate.

	v) Original and four (04) copies of the Manufacturer's/Supplier's warranty certificate. vi) Original and four (04) copies of the Inspection certificate, issued by the Purchaser or its designated representative or letter of waiver and the manufacturer's factory inspection report. vii) Original and four (04) copies of the Certificate of origin. viii) Any other document as necessary due to statutory requirements. Note: The above documents shall be received by the Purchaser at least fourteen (14) days before arrival of the Goods at the port or place of arrival and, if not received, the Supplier will be responsible for any consequent expenses. <u>For Goods from within the Purchaser's country:</u> Upon delivery of the Goods to the transporter, the Supplier shall notify the Purchaser and submit the following documents to the Purchaser: i) Original and four (04) copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount. ii) Original and four (04) copies of the Delivery Note. iii) Original and four (04) copies of the Manufacturer's or Supplier's warranty certificate. iv) Original and four (04) copies of the Insurance certificate. v) Original and four (04) copies of the Inspection certificate issued by the Purchaser or its designated representative or letter of waiver, and the manufacturer's factory inspection report; and vi) Original and four (04) copies of the Certificate of origin. vii) Proof of payment of GST. For the reimbursed of GST, production/provision of the following documents: • Invoice in triplicate • Sales Tax Invoice • Sales Tax cum payment challan for the relevant period viii) Affidavit on non-judicial stamp paper confirming to the effect that sales tax for the above supply is included in the above sales tax cum payment challan. The above documents shall be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.
GCC 13.2	Add the following new Sub-Clause after GCC 13.1: An un-excused delay by Supplier in performance of its delivery obligations shall render the Supplier liable to any or all of the sanctions including but not limited to; forfeiture of its Performance Security, imposition of Liquidated Damages, and/or termination of the Contract for default.

GCC 15.1	The increase or decrease in the amount payable by Employer to the Contractor shall be calculated on the basis of Appendix-2 Price Adjustment Formula in Section-IX of bidding document.
GCC 16.1	GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:
(A)	Payment for Goods supplied from abroad: Payment of foreign currency portion shall be made in the following manner: (i) Advance Payment: Ten (10) percent of the Contract Price shall be paid within twenty-eight (30) days of signing of the Contract Agreement. Payment shall be made provided the Supplier presents a request for payment accompanied by an Advance Payment Security in the form of a bank guarantee for an amount equal to the amount of the payment, and that shall be valid until the Goods are delivered. The security shall be in the form as specified in Section X, Contract Forms.; (ii) On Shipment: The Purchaser shall pay the Supplier eighty (80) percent of the Contract Price of the Goods shipped [through irrevocable confirmed letter of credit opened in favour of the Supplier in a bank in its country]/Direct payment procedure upon request of NGC, upon submission of documents specified in SCC Clause 13.1 here above.; (iii) On Acceptance: Ten (10) percent of the Contract Price of Goods received shall be paid within thirty (30) days of receipt of the Goods upon submission of claim supported by the acceptance certificate issued by the Purchaser on fulfilling the requirements of (i) receipt of all Goods under the Contract at NGC's designated storage yard i.e. NGC Gatti Warehouse (ii) carrying out of insurance survey in accordance with SCC Sub-Clause 24.2 (iii) issuance of Goods Receipt Note (GRN) of entire quantity of Goods by the Purchaser and. (iv) Certificate from Director General (Transmission Engineering) NGC for completing the submission of all the drawings/data as detailed in clause 4.1.2 of Section-VI-Special Provisions.
	Payment for Goods and Services supplied from within the Purchaser's country: Payment for Goods and Services supplied from within the Purchaser's country shall be made in PKR, as follows: (i) Advance Payment: Ten (10) percent of the Contract Price shall be paid within twenty-eight (30) days of signing of the Contract Agreement. Payment shall be made provided the Supplier presents a request for payment accompanied by an Advance Payment Security in the form of a bank guarantee for an amount equal to the amount of the payment, and that shall be valid until the Goods are delivered. The security shall be in the form as specified in Section X, Contract Forms.; (ii) On Delivery: The Purchaser shall pay the Supplier eighty (80) percent of the Contract Price of the Goods shipped [through irrevocable letter of credit opened in favour of the Supplier in a bank in its country]/Direct Payment

(B)	Procedure upon request of NGC, upon submission of documents specified in SCC Clause 13.1 here above iii) On Acceptance: Ten percent (10%) of Contract Price of Goods shall be paid after issuance of Acceptance Certificate issued by the Purchaser on fulfilling the requirements of (i) receipt of all Goods under the Contract at NGC’s designated storage yard i.e. NGC Gatti Warehouse (ii) carrying out of insurance survey in accordance with SCC Sub-Clause 24.2 (iii) issuance of Goods Receipt Note (GRN) of entire quantity of Goods by the Purchaser and, (iv) Certificate from Director General (Transmission Engineering) NGC for completing the submission of all the drawings/data as detailed in clause 4.1.2 of Section-VII-Special Provisions. Payment of local currency portion shall be made in PKR within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed.		
GCC 16.1	No.	Item	Procedure
	1	Advance payment	Transfer Procedure (Direct payment by the AFD acting on duly authorized request of the Purchaser).
	2	Payment for the Goods and Related Services supplied from outside Purchaser's Country	(Through Irrevocable Letter of Credit)/ Direct Payment Procedure
	3	Payment for the Goods and Related Services supplied from within the Purchaser's Country	(Through Irrevocable Letter of Credit)/Direct Payment Procedure
	4	Taxes (GST applicable)	General Sales Tax if levied & applicable on finished local Goods shall be initially paid by the Supplier and the same shall be reimbursed as per actual by the Purchaser upon production of invoice & proof of payment. (Refer GCC 17) All payments shall be subject to relevant Withholding Rules, where applicable.
	5	Custom Duties & Taxes at Port	Shall be initially paid by supplier and the same shall be reimbursed as per actual by the Purchaser upon production of invoice & proof of payment. (Refer GCC 17).
GCC 16.4	The Supplier shall be paid as stated in Schedule of Prices.		
GCC 17.1	Following paragraphs are added after Sub-Clause 17.1:		

GCC 17.1.1	<u>Local Taxation</u> The rates and prices quoted by the Supplier 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 <i>Clause 17.1.3</i> except for those sums reimbursable under <i>Clause 17.1.2</i> hereof.
GCC 17.1.2	<u>Reimbursements to the Supplier</u> A. The Purchaser will reimburse to the Supplier all such sums as the Purchaser shall certify to have been properly payable (actual without any overhead charges and profits) and paid by the Supplier in respect of the following: 1. Any fees paid in compliance with 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 Supplier or sub-suppliers or the personnel of the Supplier or sub-suppliers, as the case may be, other than fees charged for services or facilities provided. 2. Sales tax, excise duty and other similar taxes levied upon Supplier for the purpose of this Contract provided the Supplier/Manufacturer /Purchaser are not exempted from payment of these duties and taxes or these duties and taxes are not refundable to the Supplier/Manufacturer/Purchaser. The Supplier 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. B. The Supplier shall make all endeavors to avail all applicable concessions and exemptions and in case of failure, the Supplier shall be held responsible.
GCC 17.1.3	<u>Non-Reimbursable Fees, Duties and Taxes</u> The Supplier shall not be entitled to any reimbursement by the Purchaser in respect of the following: 1. Any fees charged for services or facilities paid in compliance with the provisions of Sub-Clause 17.1.2 (A)1 hereof. By way of illustration but not enumeration; any fees or moneys paid in respect of 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. 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 3. In case partial or total exemption of any duty or tax is permissible on Goods due to Government rules and regulations which the Supplier can get by due and timely application to the appropriate authority and the Supplier fails to get this exemption then the payment made by the Supplier of duties and taxes to the extent of exemption permissible will not be reimbursed.
GCC 17.1.4	<u>Exempted Duties and Taxes</u> In case of refundable duties and taxes, if any, the Supplier shall arrange the payment and secure the refund himself from the concerned agencies. In case of taxes and duties, for which the Purchaser or the Supplier is eligible for exemption under the Contract, such exemption shall be obtained by the Supplier at his own expenses. The Purchaser shall not be liable to pay to the Supplier amounts that may be paid by him towards any exempted taxes and duties. However, the Purchaser shall assist the Supplier in obtaining such exemptions.
GCC 17.1.5	<u>Statement of Reimbursements</u> The Supplier shall submit to the Purchaser after end of each month a statement giving detailed analysis of the amount paid by him during that month in respect of taxes and local body charges for which he is entitled for reimbursements under Sub-Clause 17.1.2 hereof.
GCC 17.1.6	<u>Foreign Taxation</u> The prices quoted by the Supplier shall be deemed to have included all taxes, duties and other charges imposed outside Pakistan on the production, manufacture, sale and transport of the Goods to be supplied 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 Supplier.
GCC 17.1.7	<u>Advance Income Tax</u> 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 Purchaser in the Government treasury to the credit of Supplier's account. 2) The Supplier 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 Supplier in respect of this Contract, he shall notify the Purchaser in writing giving all details. The Purchaser will then be able to make payments without the deduction of advance income tax.
GCC 17.1.8	<u>Payment of Income Tax</u> The Supplier 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.

GCC 17.1.9	<u>Personal Taxes and Duties</u> The Supplier or his personnel shall pay all personal income tax or other taxes due in Pakistan, if any, for the personnel employed by the Supplier for implementing the work or any other activity required by the Contract. The Supplier shall obtain, at his own cost, work permits from competent authorities to enable any foreign personnel to work in Pakistan. The Supplier 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 Purchaser will, if requested, assist the Supplier in obtaining visas and work permits.
GCC 17.2	This Clause is replaced with the followings: For Goods supplied from within the Purchaser's Country, the Supplier shall be entirely responsible for inland payment of all taxes, including but not limited to 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 goods quoted ex works or ex-factory, or on the previously imported goods of foreign origin quoted ex warehouse, ex showroom, or off-the-shelf. <i>However, sales tax and all other taxes applicable in the Purchaser's country and payable on the finished Goods, shall be reimbursed by the Purchaser.</i>
GCC 18.1	The Supplier shall provide a Performance Security of 10% percent of the Contract Price. The Performance Security shall be denominated in the same currency(ies) as of the Contract Price within fourteen (14) days after receipt of Letter of Acceptance.
GCC 18.3	The Supplier shall provide a Performance Security as per format given in Section-X (Contract Forms) of the Bidding Documents. At the supplier's option, the Performance Security shall be in the form of an unconditional Bank Guarantee from either (a) any Scheduled Bank in Pakistan, or (b) a bank located outside Pakistan duly counter-guaranteed by a Scheduled Bank in Pakistan to make it enforceable. For avoidance of doubt, the Bank Guarantee issued by a foreign bank, without counter-guarantee from a Scheduled Bank in Pakistan shall not be considered as an acceptable Bank Guarantee. The cost of complying with the requirements of this Sub-Clause shall be borne by the Supplier.
GCC 18.4	Replace the text of Sub-Clause 18.4 with the following: Discharge of Performance Security shall take place within twenty-eight (28) days after issuance of Warranty Certificate in accordance with SCC Sub-Clause 28.3.

GCC 23.2	<u>Packing & Documents</u> The packing, marking and documentation within and outside the packages shall be: Packing (1) The Contractor shall prepare and pack all parts of the Plant & 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.
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- (3) The manufacturer may at his own option furnish the conductor on non-returnable steel reels at no a longest length in a set shall not exceed 46 meters. The average length between sets may vary $\pm 5\%$ from the nominal length of 5000 meters. The reels shall be designed for nominal tension stringing operations and shall conform to standard laid out by Aluminum Association of USA

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

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.

Reels shall be wood lagged, the lagging to be secured with three (03) steel bands. Steel bands shall be intermittently stapled to lagging.

It is the responsibility of the Supplier to ensure that the method of packing shall be strong enough to withstand wear and tear during sea/inland transportation and handling at site.

- (4) Methods of packing, marking and shipping shall be submitted to the Engineer for review and acceptance. Before any shipment is made, the Contractor shall get the packing detailed drawings approved by the Engineer.

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.

Identification Marking

1. All units or components of the Equipment shall be plainly die-indented with a number to identify the unit or component itself and with a letter to indicate the type of Goods in accordance with approved drawings. The identification marking shall be plainly legible and durable and shall be so located that other member, part, unit or component when in its assembled position does not obscure the number or letter. All the marking on ferrous part or unit shall be made before galvanizing.
2. Each crate, case, box or package 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 Goods 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 NGC so that various components of the Goods, 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 NGC 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

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:

Ultimate Consignee:

Director General (Procurement), NGC Lahore, Pakistan
 Through
 Chief Engineer (Custom Clearance & Logistics) NGC, Karachi
 Final Destination _____
 Contract No. _____
 Name of Project _____
 Weight And Dimension _____
 Serial Number _____
 Code No. _____
 Purchaser Inscription "NGC"

GCC 24.1	<u>Insurance</u> Pursuant to GCC, Sub-Clause 24.1, i. For Goods to be provided from outside the Purchaser Country the Supplier must insure the goods in the joint names of the Purchaser and the Supplier in an amount equal to 110% of CIP Karachi price of the goods from warehouse to warehouse on all risks basis, including but not limited to war risks, strikes, riot and civil commotion (SRCC), fire, smoke, explosion, terrorism, collision, overturn, derailment, flood, theft or attempted theft. ii. For Goods to be provided from within the Purchaser Country, the Supplier must insure the goods in the joint names of the Purchaser and the Supplier in an amount equal to 110% of the EXW price of the goods from warehouse to warehouse on all risks basis, including but not limited to war risks, strikes, riot and civil commotion (SRCC), fire, smoke, explosion, terrorism, collision, overturn, derailment, flood, theft or attempted theft.
GCC 24.2	Add the following new Sub-Clause after 24.1: The insurance must remain in force for a period of ninety (90) calendar days after receipt of all Goods under the Contract at NGC's Warehouse Gatti Faisalabad, and conducting of insurance survey by the insurer. The Supplier shall arrange and pay for such insurance survey. The insurance shall be affected from any international reputed firm OR National Insurance Company Limited (NICL), Pakistan. The terms of insurance shall be as approved by the Purchaser. A draft Insurance Policy shall be submitted by the Supplier within fourteen (14) days following signing of Contract Agreement, for approval by the Purchaser. Should a loss be sustained, the Supplier shall replace or repair any loss or damage and complete the supplies of Goods in accordance with the Contract as soon as possible after such loss or damage without waiting for the settlement of the insurance claim.
GCC 25.1	Obligations for transportation of the Goods shall be in accordance with Incoterms 2020.

GCC 26	The following sub – clauses shall supplement the relevant GCC clause 26 and shall prevail in case of any contradiction with GCC clause 26. 26.1 All goods covered by the Contract shall be subject to type testing /pre-shipment inspection/FAT in line with the requirements of relevant specification(s)/NGC Revised Type Test Policy. 26.2 The pre-shipment inspections/FAT shall be conducted at manufacturer's works. All reasonable facilities (laboratory, tools, instruments, machines, samples etc.) as provided in the specifications or followed by Trade & Industry in general and assistance, including access to drawings and production data, shall be furnished to the inspectors for carrying out Testing and Inspection at no charge to the Purchaser. 26.3 Two authorized representatives of the NGC nominated by Director General (Transmission Engineering) shall carry out pre-shipment inspection/FAT (if applicable in accordance with clause 1.2.1, Section-3 (Evaluation & Qualification Criteria) and clause 5, Section-7 (Schedule of Requirements)). The Purchaser shall bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all travelling and boarding and lodging expenses at the per diem rates specified by the government of Pakistan. The Supplier shall fully assist the nominated inspectors in submission of visa application(s) by providing all supporting document on his part and help in attaining visa through necessary correspondence with the embassy. 26.4 The Supplier shall keep the Purchaser informed the progress of manufacturing and notify the Director General (Transmission Engineering), NGC at least two (2) months in advance, in writing as to when the Goods will be ready for inspection and/or performance of type tests. The Supplier shall obtain from manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection. 26.7 In case the goods fail to withstand any test performed at manufacturer works and also for type test to be performed as per NGC Revised Type Test Policy attached as Annexure-II(if applicable in accordance with clause 1.2.1, Section-3 (Evaluation & Qualification Criteria) and , Section-7 (Schedule of Requirements)., the cost of type test to be performed and/or any repeating test, and the cost (boarding, lodging, the diem specified by the government of Pakistan /day/inspector, return air ticket, visa expense etc) of witnessing such test by the approved two No. representatives of the NGC nominated by Director General (Transmission Engineering), shall be borne by the Supplier and the equipment released or modified to the satisfaction of the Purchaser, without any additional cost to the Purchaser. 26.8 Any inspection and/or witnessing of tests or the waiving of such tests and/or surveillance by the Purchaser or two Representatives of NGC (one of each) shall not relieve the Supplier of its obligations, warranties and responsibilities under the Contract regardless of any approval consent given by the Purchaser. 26.9 The approval by two Representatives of NGC of any Goods prior to shipment shall in no way relieve the Supplier of any of his responsibilities for meeting all of the requirements of the Specifications and shall not
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	prevent subsequent rejection if such Goods are later found to be defective or not conforming to the Specifications. a) All work covered by the Contract shall be subject to surveillance, testing and inspection by two representatives of NGC. The Representatives may require witnessing any or all the tests to be carried out. For such purpose the Supplier shall provide free access at all times during manufacture, assembly and testing to the premises in which the work is being carried out.
GCC 27.1	<u>Liquidated Damages</u> a. The liquidated damages shall be 0.5% of the total contract price of Goods per week of delay. The maximum amount of liquidated damages shall be ten percent (10%) of the Contract Price of Goods.
GCC 28.1	<u>Warranty</u> Add the following at the end of GCC Sub-Clause 28.1: The Supplier further warrants that all Goods supplied under this Contract shall have no defect arising from design, materials, or workmanship (except in so far as the design or material is required by the Purchaser's specifications) or from any act or omission of the Supplier that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.
GCC 28.3	a. Amend the text of GCC Sub-Clause 28.3 as under: The warranty shall remain valid for twelve (12) months after erection and commissioning of the Goods at site or for eighteen (18) months after entire Goods have been delivered to and accepted at the final destination, whichever period concludes earlier. For purpose of warranty, the place of final destination is NGC Gatti Warehouse b. Add the following at the end of GCC Sub-Clause 28.3: Within fourteen (14) days after completion of warranty period up to the satisfaction of Purchaser & Engineer, the Purchaser shall issue Warranty Certificate to the Supplier. Date of acceptance of Goods will be considered from the date of issuance of last GRN (Goods Receipt Note).
GCC 28.5 and GCC 28.6	The Supplier shall correct any defects covered by the Warranty within thirty (30) days of being notified by the Purchaser of the occurrence of such defects.
GCC 30 30.1 (b)	<u>Limitation of Liability</u> The amount of aggregate liability shall be Hundred Percent (100%) of the total Contract Price.
GCC 33 33.4	<u>Change Orders and Contract Amendments</u> Add the following new Sub-Clause after 33.3: The Purchaser may increase or decrease the quantities of Goods to the extent of 15% of the Contract Price during currency of the Contract without any change in the unit price or other terms and conditions of the Contract.

Appendix 1 to Special Conditions of Contract - Corrupt and Fraudulent Practices Policy and Social and Environmental Responsibility

1. Prohibited Practices

The Contracting Authority and the suppliers, contractors, subcontractors, consultants or subconsultants shall respect the highest ethical principles during the procurement and performance of Contracts. The Contracting Authority means the Purchaser, the Employer, the Client, as the case may be, for the procurement of goods, works, plants, consulting services or non-consulting services.

For the purpose of this provision, AFD introduces the concept of Prohibited Practices, referring to acts as defined in the “General Policy to Prevent and Combat Prohibited Practices”¹ available on the AFD website and in the document titled “Procurement Guidelines for AFD-Financed Contracts in Foreign Countries”².

By signing the Statement of Integrity the suppliers, contractors, subcontractors, consultants or subconsultants declare that they have not engaged, nor will they engage, in any Prohibited Practices during the procurement and execution of the Contract.

A Person³ or any of its subcontractors, Directors⁴, employees or agents (be it declared or not), may not be awarded an AFD-financed Contract if on the date of submission of its Application, Bid, Proposal or Quotation, or at any time between this date and that of the corresponding Contract award, it has engaged in a Prohibited Practice, directly or by means of an agent (be it declared or not), for the purpose of being awarded this Contract.

Moreover, AFD requires including in the procurement documents and AFD-financed contracts a provision requiring that applicants, bidders, suppliers, contractors, subcontractors, consultants or subconsultants will permit AFD to investigate, including the inspection of their accounts and records relating to the procurement process and performance of the AFD-financed contract, and to have them audited by auditors appointed by AFD.

For the purpose of detecting and effectively combating Prohibited Practices, AFD has established a whistleblowing mechanism open to third parties: anyone can thereby directly report an allegation of a Prohibited Practice to AFD’s Investigations Function, either:

- By e-mail, to the address investigationsGroupeAFD@tutanota.com, or
- By sending a letter to AFD’s Compliance Department, 5 rue Roland Barthes, 75012 Paris.

2. Environmental, Social, Health and Safety (ESHS) Responsibility, and Security

In order to promote sustainable development, AFD seeks to ensure that internationally recognized ESHS standards are complied with in the Contracts it finances. Consequently, the applicants, bidders, consultants and their subcontractors shall undertake, by signing the Statement of Integrity, to:

- a) Comply with the environmental standards recognized by the international community, including the international conventions for the protection of the environment and, in particular, take all reasonable steps to avoid or limit negative effects on vegetation, biodiversity, soils,

¹ For more information, this Policy is available on the following link : <https://www.afd.fr/en/combating-corruption>

² For more information, the Procurement Guidelines are available on the following link : <https://www.afd.fr/en/bid-invitations-and-procurement>

³ Means any natural or legal person, as well as any association or group of several such persons.

⁴ Means any natural person who is a member of the administrative, management or supervisory bodies of a legal entity, or who is vested with powers of representation, decision-making, or control over a legal entity.

groundwater and surface water, and on persons and property resulting from pollution, noise, vibration, traffic and other effects resulting from our activities, in accordance with the laws and regulations applicable in the country of performance of the Contract.

- b) Implement measures to mitigate environmental and social risks when they are indicated in the environmental and social management plan provided by the Contracting Authority, and ensure that the emissions, surface discharge and effluents produced by our activities respect the limits, specifications or requirements applicable to the Contract.
- c) Respect the rights of workers related to wages, working hours, rest periods and vacations, overtime, minimum age, regular payments, compensation and benefits, in accordance with the standards recognized by the international community, including the fundamental conventions of the International Labour Organization (ILO), in accordance with the laws and regulations applicable in the country of performance of the Contract; indicate these elements in a document annexed to the employment contracts of our employees and made available to the Contracting Authority; and respect and facilitate the rights of workers to organize themselves and set up a complaints management mechanism for direct or indirect workers.
- d) Implement practices for non-discrimination and equal opportunities, and ensure the prohibition of child labor and forced labor.
- e) Keep a record for each member of the local staff recording the hours worked by each person, the type of work, the wages paid and the training undertaken, and ensure that these records are available at all times to be inspected by the Contracting Authority and the authorized representatives of the government, in accordance with the laws and regulations applicable to the protection of personal data in the country of performance of the Contract.

Appendix-2: Price Adjustment Formula

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

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

The Contract Price shall be adjusted for the local/foreign currency prices of only the following material components stated in the Price Schedules for any increase or decrease in the costs:

- a) Rate of Steel for Steel Lattice Towers including Stubs, and steel part of Alumoweld OPGW
- b) Rate of 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 Goods 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

$$P_1 = P_0 \left[a + b \frac{S_1}{S_0} + c \frac{A_1}{A_0} \right]$$

in which:

- | | | |
|-------|---|--|
| P_1 | = | Revised adjusted Contract Price; |
| P_0 | = | Contract Price (base price); |
| a | = | Fixed Portion 30%; |
| b | = | Steel component; <ul style="list-style-type: none"> • 05% for ACSR Conductor |
| c | = | Aluminum component <ul style="list-style-type: none"> • 65% for ACSR Conductor |
| S_0 | = | Base rate of steel (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 Rebar or Pakistan Steel Mills (PSM) Billet rate (whichever is applicable); |
| S_1 | = | Revised rate of Steel (US \$ per Metric Ton) prevailing sixty (60) days after the signing of Contract Agreement, based on LME cash (official) rate applicable for all grades of Steel Rebar or Pakistan Steel Mill (PSM) Billet rate (whichever is applicable). |
| A_0 | = | 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 after the signing of Contract Agreement.

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.

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

- (a) No price adjustment shall be allowed beyond the original delivery dates unless specifically stated in the extension letter. As a rule, no price adjustment shall be allowed for periods of delay for which the Supplier is entirely responsible. The Purchaser will, however, be entitled to any decrease in the prices of the Goods and Services subject to adjustment;
- (b) If the currency in which the Contract Price P₀ is expressed is different from the currency of origin of the material indices, a correction factor will be applied to avoid incorrect adjustments of the Contract Price. The correction factor shall correspond to the ratio of exchange rates (composite TT&OD) published/authorized by State Bank of Pakistan between two currencies on date for adjustment and base date as define above and per below formula:

$$\text{Correction Factor} = Z1 / Z0,$$

Where, Where, Z1 = 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,

Z0 = No. of units of Currency of Contract Price which is equivalent to One (01) US Dollar (currency of material indices) on the Base Date.

- (a) No price adjustment shall be payable on the portion of the Contract Price paid to the Supplier as advance payment.

Section X. Contract Forms

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

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Letter of Acceptance

[letterhead paper of the Purchaser]

[date: _____]

To: *[name and address of the Supplier]*

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

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

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

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Institution: _____

Attachment: Contract Agreement

Contract Agreement

THIS AGREEMENT made

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

BETWEEN

- (1) [insert complete name of Purchaser], a [insert description of type of legal entity, for example, an agency of the Ministry of of the State of {insert name of Country of Purchaser }, or corporation incorporated under the laws of { insert name of Country of Purchaser }] and having its principal place of business at [insert address of Purchaser] (hereinafter called “the Purchaser”), and
- (2) [insert name of Supplier], a corporation incorporated under the laws of [insert: country of Supplier] and having its principal place of business at [insert: address of Supplier] (hereinafter called “the Supplier”).

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., [insert brief description of Goods and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of [insert Contract Price in words and figures, expressed in the Contract currency (ies)] (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other contract documents.
 - (a) The Letter of Acceptance;
 - (b) The Bid Submission Form and Appendix to Bid Submission Form (including the signed Statement of Integrity);
 - (c) The Addenda Nos. _____ (if any);
 - (d) Special Conditions of Contract;
 - (e) General Conditions of Contract;
 - (f) The Specification (including Schedule of Requirements and Technical Specifications);
 - (g) The completed Bidding Forms (including Price Schedules);
 - (h) Any other document listed in GCC as forming part of the Contract.
3. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

4. In consideration of the payments to be made by the Purchaser to the Supplier as specified in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
5. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

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

For and on behalf of the Purchaser

Signed: *[insert signature]*

In the capacity of *[insert title or other appropriate designation]*

In the presence of *[insert identification of official witness]*

For and on behalf of the Supplier

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

In the capacity of *[insert title or other appropriate designation]*

In the presence of *[insert identification of official witness]*

Performance Security (Bank Guarantee)

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

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

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

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

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

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

[signature(s)]

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

²Insert the date twenty-eight days after the expected completion date as described in GC Clause 18.4. The Purchaser should note that in the event of an extension of this date for completion of the Contract, the Purchaser would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Purchaser might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months]/[one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

Advance Payment Security

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[Insert name and Address of Purchaser]*

Date: *[Insert date of issue]*

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

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

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

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

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

- (a) Has used the advance payment for purposes other than toward delivery of Goods; or
- (b) Has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.

A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Applicant on its account number *[insert number]* at *[insert name and address of Applicant's bank]*.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Applicant as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount,

¹ The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency(ies) of the advance payment as specified in the Contract, or in a freely convertible currency acceptable to the Purchaser.

has been certified for payment, or on the *[insert date¹]*., whichever is earlier. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

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

[signature(s)]

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

¹ Insert the Delivery date of the Goods at the named place of destination stipulated in the Contract Delivery Schedule. The Purchaser should note that in the event of an extension of the time to perform the Contract, the Purchaser would need to request an extension of this Guarantee from the bank. Such request must be in writing and must be made prior to the expiration date established in the Guarantee. In preparing this Guarantee, the Purchaser might consider adding the following text to the Form, at the end of the penultimate paragraph: “We agree to a one-time extension of this Guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Purchaser’s written request for such extension, such request to be presented to us before the expiry of the Guarantee.”



**National Grid Company of
Pakistan Limited (NGC)**

Bidding Document

AFD-TL-03-2026

**Procurement of Transmission Line Conductor for 220kV
T/Lines Associated with 500/220kV Sialkot & 220kV Arifwala
Substations**

Volume-II

Single-Stage: One-Envelope Bidding Procedure

Agence Française de Développement



September, 2026

Table of Contents

This Volume-II of Bidding Document No. AFD-TL-03-2026 comprises of:

- 1) NGC SOP for Blacklisting
- 2) NGC Type Test Policy
- 3) Technical Specifications & Drawings

SOP FOR BLACKLISTING OF CONTRACTORS



**NATIONAL TRANSMISSION
AND DESPATCH COMPANY
LIMITED (NTDC)**

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CHAPTER NO.1

1.1 INTRODUCTION

The blacklisting is one of the considered instruments which are used in the struggle against the corruption in connection with the public procurement. The main objectives of any procurement process are transparency, economy, fairness and efficiency so that public money is spent on welfare of the public. Hence, blacklisting is an instrument, which may lead to the decrease of the potential corruption risks and also inculcate protection of public means and increase of effectiveness of allocation of the limited resources.

Rule-19 "Blacklisting of suppliers and contractors" of the Public Procurement Rules, 2004 (hereinafter "PPRA Rules") stipulates that;

"The procuring agencies shall specify a mechanism and manner to permanently or temporarily bar, from participating in their respective procurement proceedings, suppliers and contractors who either consistently fail to provide satisfactory performances or are found to be indulging in corrupt or fraudulent practices. Such barring action shall be duly publicized and communicated to the Authority: Provided that any supplier or contractor who is to be blacklisted shall be accorded adequate opportunity of being heard."

In the light of the above said Clause, this SOP has been drafted for procurements made in NTDC.

Any capitalized terms and abbreviations used in this SOP which are not defined therein shall have the meanings given to them in Public Procurement Regulatory Authority Ordinance, 2002 (hereinafter "PPRA Ordinance") and PPRA Rules.

1.2 EXTENT OF APPLICATION

- i. The procedure shall be applicable and remain in force, alongwith any amendments thereto, within NTDC until any clear instructions or guidelines are not imparted by the Government through PPRA, PEC or any other competent forum.
- ii. The procedure shall also be applicable on the pre- qualified firms.
- iii. The procedure shall be applicable for suppliers / bidders/contractors / local agents / representatives /consultants / firms / individual / organization transacting business with NTDC.
- iv. Wherever any provision of this SOP shall be in conflict with provisions of any applicable guidelines of donor agencies, or any other applicable Statute / Law or Rule enforced at the time in Pakistan, the provisions of the such Statute / Law or Rule shall prevail.



- v. This SOP will become the part of future Bidding Documents and bidder will submit an Undertaking along with his bid that he has read and accepts the provisions of this SOP. Non-submission of an Undertaking may result in rejection of his bid. The said Undertaking will subsequently become part of the Contract Agreement as well.

A handwritten signature in blue ink, appearing to be 'G. J. A.', with a long horizontal line extending to the right.

CHAPTER NO. 2

2. REASONS OF BLACKLISTING

2.1 The causes and reasons to be taken into consideration for Debarment / Blacklisting of any firm/ supplier/ contractor/ consultant /individual / firm/ bidder are given as under:-

2.1.1 Competitive Bidding Stage

The following shall be considered the causes / reasons at pre-award stage:-

- i. Indulging in Corrupt, Fraudulent as well as Collusive practices.
- ii. Submission of false and spurious documents, making false statements and allegations to gain undue advantage.
- iii. Commission of embezzlement, criminal breach of trust, theft, cheating, forgery, bribery, falsification or destruction of records, receiving stolen property, false use of trademark, securing fraudulent registration, giving false evidence, furnishing of false information.
- iv. Submission of false bid security or infringement of documents to get undue monetary advantage.
- v. Breach of confidentiality of evaluation process as mentioned in Appendix-1 based on illegal access or in any way to get undue benefit or to provide benefit or to frustrate any other bidder. This will also include attempts to sabotage the bidding process directly or indirectly.

2.1.2 Contract Implementation Stage

The following shall be considered the major causes / reasons at post-award stage:-

- i. Extra-ordinary delay in signing or refusal to accept the procurement contract without any cogent reason or pre-award Force Majeure, when the bid has been evaluated and accepted by the Project authority.
- ii. Misconduct i.e. failure to proceed with the signed procurement contract, withdrawal of the commitment, quoting an unreasonably and unfairly low financial offer and subsequently withdrawing such an offer, and not responding to written communication.
- iii. Causes already mentioned in Clause 2.1.1 (i, ii & iii) above.
- iv. Submission of fake / frivolous Performance Guarantee or Advance Payment Guarantee etc.



- v. Non-satisfactory performance as mentioned in Appendix-2 during the execution of the contract and failure to perform a procurement contract(s) satisfactorily in accordance with the contractual obligations which in the opinion of project authority was due to exclusive fault of the supplier.
- vi. Breach of provisions / clauses of the contract agreement.
- vii. Failure to honour obligations within Warranty period or Defect Liability Period as defined in the procurement contract.

2.1.3 Other Causes

- i. The firm / supplier / contractor is blacklisted by any Government department in Pakistan, or it is established that the firm is involved in any kind of corruption or corrupt practices anywhere in the world.
- ii. Violations of provisions / instructions set down in the Bidding Documents.
- iii. Any attempt / activity to malign or bring NTDC into disrepute and harm its interest(s).
- iv. Any other cause deemed just and appropriate by the NTDC.

Note:

- (1) If above mentioned causes occur either on part of the principal bidder or the local agent, both shall be considered for blacklisting / debarment. The authorization of the foreign bidder to local agent shall contain his complete particulars including the name of the company, name of the owner, National Tax number (NTN), NIC (National Identity Card) No. etc. In case, the said information is found to be missing, the authority letter shall not be accepted.
- (2) The Bidding Documents shall be issued against original authority letter or in case of scanned copy, the email of the foreign bidder shall be enclosed. However, at the time of bidding, the original authority letter shall be attached with the bid. In the absence of the same, the bid may be rejected.
- (3) Firms blacklisted by donor agencies against any project / contract of NTDC will be blacklisted after receipt of confirmation from the donor agencies without any further proceeding.



CHAPTER NO. 3

3. FORMULATION OF “NTDC’S RIGHTS PROTECTION COMMITTEE”

- 3.1 A permanent committee namely “NTDC’s Rights Protection Committee (RPC)” comprising of the following members shall examine the justification of the reasons given by the Project Authority prior to blacklisting / debarment of any firm/supplier/contractor/ individual.

General Manager (Performance Assessment) NTDC

Chief Engineer (Reliability Assessment) NTDC

Representative of the Legal Advisor’s Office

Convener

Member

Member

Depending upon the nature of the case, the committee may consult or appoint / nominate any additional member from within NTDC with the approval of Managing Director (NTDC), provided that the Committee consists of an odd number of individuals as per spirit of Rule 48(I) of the PPRA Rules. Independence of any additional member shall be ensured while making the selection of such additional members. Furthermore, the aforementioned RPC shall also be authorized to seek external expert advice as and when required.

The committee shall finalize its recommendations within the time specified in Clause-4.3(i) of this SOP.



CHAPTER NO. 4

4.1 PROCEDURE FOR BLACKLISTING

Upon obtaining information and /or knowledge that the firms, suppliers, local agents, contractors or their representatives, consultants, individuals, bidders involved in practices mentioned in Chapter-2 earlier, the concerned Project Authority / formation shall promptly formulate its recommendations and submit through MD NTDC to NTDC RPC along with its findings, details of charges and documentary evidences to initiate proceedings.

4.2 INITIATION OF AN ACTION

- (i) Within a period of 7 days after receiving the recommendations of Blacklisting / Debarment from the concerned Project Authority, the Convener of the Committee shall issue a Show Cause Notice ("**Notice**") thereby informing the individual or organization about charges in detail and shall provide an opportunity to the defend said charges within a specific time period of 15 (fifteen) days.
- (ii) The firm / individual / organization shall be accorded adequate opportunity of hearing in order to defend the charges within the given timelines.
- (iii) The non-receipt of the Notice due to incorrect / change in mailing address shall not be attributable to NTDC. Moreover, in case of non-receipt of any reply from the defendant, the Committee shall have the right to proceed on Ex-parte basis.

4.3 DECISION

- i. The committee shall hold an independent investigation and which may include site visits and interviews with the parties concerned. The committee shall complete the entire investigation within a period of 30 days after receipt of response from the alleged firm / organization/ person and will present the report to the MD NTDC.
- ii. If required the committee can report the case to other national agencies such as National Accountability Bureau, FIA etc. for detailed investigations with the prior approval of Managing Director (NTDC).
- iii. The alleged party shall not proceed for arbitration / litigation during the proceedings for blacklisting.



4.4 COMMUNICATION OF DECISION

After recommendation for blacklisting by "NTDC's Rights Protection Committee (RPC)", the bidder / contractor / supplier concerned shall be informed within 10 days of such decision. The decision of the Committee will be notified on NTDC, PPRA's websites and shall also be conveyed to Pakistan Engineering Council. Blacklisting of firms shall also be conveyed by circular to other Government Departments. All other purchasing agencies including PEPCO, DISCOs, and WAPDA etc will also be informed simultaneously.

4.5 PERIOD OF DEBARMENT FOR BLACKLISTED FIRMS

The Blacklisting shall be for a reasonable specified period of time and as a general rule of prudence, the period may not exceed three years. The following time periods shall be considered for debarment on account of blacklisting:-

Causes of Blacklisting	Time For Debarment
Corrupt & fraudulent & collusive practices, criminal breach of trust	3 years
Submission of fake documents including financial instruments like securities & guarantees, submission of false Financial statements / Audit reports etc.	3 years
Making false statement and allegation to gain undue advantage	2 years
Commission of embezzlement, theft, cheating, forgery, bribery, falsification or destruction of records, receiving stolen property, false use of trademark, securing fraudulent registration, giving false evidence, furnishing false information.	3 years
Breach of confidentiality of evaluation process as mentioned in Appendix I hereto	6 months to 2 years as mentioned in Appendix-1
Extraordinary delay in signing or refusal to accept a procurement contract without cogent reasons, when the bid has been accepted by NTDC	6 months to 2 years as determined by the Committee
Non-satisfactory performance as mentioned in Appendix-2	2 years
The contractor was blacklisted by the government or the donor agency and subsequently adopted by NTDC	3 years or the time period for which the concerned agency debarred the contractor, whichever is higher

Note: All the penalties given herein above will be in addition to the consequences already agreed by the parties in the contract or any other document.



4.6 ACTION AFTER FIRMS ARE PLACED ON BLACKLIST

- i. The decision of blacklisting will be immediately circulated to all concerned as mentioned at Clause 4.4 above.
- ii. In case of a contract already awarded to a firm / contractor which has been blacklisted and termination is either not possible or not feasible, the concerned Project Authority may proceed in this case to complete the contract with the approval of Competent Authority.
- iii. The blacklisted firms / contractors shall stand disqualified from bidding from the date of decision against them. Any pending bids shall also stand rejected. If a contract has already been awarded to such a firm / contractor, it shall be voidable at the option of NTDC as per 4.6 (ii) above.
- iv. A separate register or data base will be maintained for blacklisted firms indicating reasons and period.

4.7 EFFECTIVENESS

These guidelines / SOP or any amendments thereof shall take effect immediately after its approval from Board of Directors of NTDC.

APPENDIX-1

PROCESS TO DEAL WITH COMPLAINTS

It has been frequently observed that after opening of tenders, the bidders start to influence the evaluation process. Such mis-leading attempts result in delay in finalizing of award of contract and cause financial loss to the National organization and stain its sanctity. The evaluation process is confidential till publication of award of contract process.

Provision of guidelines of international donor agencies and PPRA provides sufficient opportunity to bidders for redressal of their grievances. Hence, the attempts made by the bidders during evaluation process to influence the contract award decisions fall under the definition of corrupt and fraudulent practices. Therefore, during bidding stage, the following mechanism shall be adopted in case of receipt of any complaint from the bidder.

- i. Anonymous complaints shall not be entertained.
- ii. The notice of displeasure and explanation will be immediately sent to those firms who lodge the complaint during the evaluation process.
- iii. If the firm does not refrain from making complaints in the same tender, the official warning will be sent and their case will be sent to "NTDC's Rights Protection Committee" which may analyse the situation and suggest action including the rejection of the bid of the complainant. However, Project Authority with prior approval of MD (NTDC) may reject the bid even in first instance depending upon nature of the case or provision of the Bidding Documents.
- iv. If the same bidder itself or through its agent or any third party lodges complaint in another tender floating in parallel before decision of the committee, its bid will straight forwardly be rejected by the project authority. It may also be debarred to participate in the next tender for six months under intimation to the Committee and MD NTDC.
- v. If the same bidder itself or through its agent or any third party lodges complaint third time in the same or any other tender within a period of one year, its bid will be rejected and bid security will be forfeited by the project authority. It may also be debarred to participate in the next tender for one year under intimation to the Committee and MD NTDC.
- vi. In order to monitor the record of the bidders, a data base will be maintained at NTDC's website and the offices of the project authorities regarding firms / suppliers/contractors who consistently lodge complaints during the evaluation process by making clandestine access to confidential record and hamper the award of contract process.



- vii. Any bidder feeling aggrieved by any act of the procuring agency after the submission of his bid may lodge a written complaint concerning his grievances not later than fifteen days after the announcement of the bid evaluation report under rule 35. The committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.



APPENDIX-2

GUIDELINES FOR EVALUATION OF PERFORMANCE OF CONTRACTORS

- i. After signing of the contract, the Project authority (or the Consultant / Engineer) must monitor and control the Contractor's performance, that is, whether the Contractor is fulfilling his obligations based on the terms of the contract and plans that were developed and agreed upon with the Project authority at the time of signing of contract or during kick-off meetings. In case of breach of Contract or consistent non-performance shall tantamount to termination of the Contract, encashment of performance security or debarment / blacklisting.
- ii. Though the Contractor's performance evaluation is an on-going process, which takes place throughout the duration of the contract and also during the Defect Liability / Warranty Period, hence, a Contractor's Performance Evaluation Report shall be drafted by the project authority once all of the contractual obligations of the latter have been completed so that the Project authority have gained a more complete picture that will help it in formulating a more objective judgement.
- iii. The report may be prepared for all contracts of more than Rs. 100 million. When based on the Evaluation Report the performance of the Contractor is deemed as non-satisfactory in consecutive 02 No. EPC contracts (or the contractor receives 02 No. Notices of Default against consecutive contracts within a period of 2 years) and 03 No. supply contracts awarded within a period of 2 years, the procuring agency may initiate the case for blacklisting of the contractors.
- iv. In case of an extra-ordinary delay in performance of a single contract of vital and critical importance, the procuring agency shall have the right to terminate the contract, recover its loss and debar the contractor for participation in future tenders. The procuring agency shall be the sole judge to determine the importance of the project.
- v. The above said assessment will be in addition to the provisions already agreed by the parties in the contract or any other document.





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. Politecnico 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.

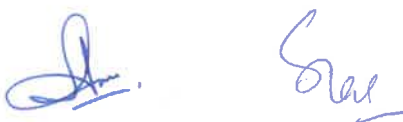
5. If the offered Circuit Breaker or Disconnecter has different continuous current rating than that of the type tested one, then only Temperature rise / continuous current test shall be re-performed from either of the following, provided that the type test reports do not violate the criteria as mentioned 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	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
		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		
		x.	Impact test		
		xi.	Artificial Pollution Performance test		
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	

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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)



ACSR Rail Conductor

These technical provisions shall be read in conjunction with P-50 and in case of any conflict, these technical provisions shall prevail over P-50.

Replace "*The coating on the zinc-coated steel wires may be applied by the hot process or the electrolytic process*" in clause 5.1, with, "The steel core strands must be able to withstand 4 dips of the preece test in accordance with the ASTM A239. The other requirements of steel core shall conform to ASTM B498. The Zinc coating for steel core wire for conductor shall conform to Class A zinc coated steel wire. The purity of Zinc used for galvanization shall be 99.995%."

i) Add following clauses after clause 8.5 in the specification:

- 8.6 The conductor shall be stranded in one pass if this is practical. If this cannot be done, the conductor shall be stranded in a maximum of two passes.
- 8.7 When stranding the steel core or the partially stranded conductor and the wires to be added shall be inside the stranding premises for a long enough time period to ensure that the steel core or partially stranded cable and the wires to be added are at the same temperature that will be maintained throughout the stranding process.
- 8.8 Once the stranding and storing procedure has been started, the same procedure shall be followed for the balance of the wire for a given destination in order to give all wire as near the same stranding history as possible.
- 8.9 For ACSR conductor, steel wire from various manufacturers may be used. However, all conductors for a given destination shall be manufactured from the steel core wire from one manufacturer. If steel core wire from more than one source is being used, this shall be indicated on the reels.
- 8.10 Same stranding machine or combination of stranding machines, if more than one pass is required, shall be used for all conductor unless otherwise approved in writing by the Engineer. Marking on reels shall indicate when a different machine or combination of machines is used.

8.11 FABRICATION

The nominal conductor weight is based on ASTM standard stranding increments. The actual weight will be dependent on production of lengths.

The wires shall be so stranded that when the conductor is cut, it shall be essentially free from a tendency to untwist or spring apart.

The finished conductor shall be uniformly cylindrical and shall be capable of withstanding the normal handling in manufacturing, shipment and installation without being deformed in such a way as to increase corona losses and radio interference.

The conductor shall be free from excessive amounts of die grease, metal particles and dust, and all imperfections not consistent with best commercial practice. The finished product shall be free from projections and nicks to limit corona and radio interference.

ii) Replace the text in P-50 from clause 9 onwards, with following text;

9. Tests

9.1 Type tests

The following type tests shall be carried out in accordance with standards mentioned against each and detail given below:

1. Stress strain test
2. Joints in Aluminum Alloy/Aluminum wires
3. Ultimate tensile Strength and Longitudinal Smoothness Test

(a) Stress – Strain Test:

The stress-strain test shall be performed on the conductor in accordance with the method given in Annex B of IEC-61089.

Moduli of elasticity and 'laboratory' stress-strain curves shall be obtained with loadings of 30%, 50%, 70% and 85% of the rated ultimate tensile strength of the conductor. Finally, the initial stress-strain curve represented by a 4th order polynomial shall be derived and be considered as the 'typical' stress-strain curve.

$$\sigma = a_0 + a_1 * \varepsilon + a_2 * \varepsilon^2 + a_3 * \varepsilon^3 + a_4 * \varepsilon^4$$

where,

σ : stress [MPa]

ε : strain [%]

a_x : coefficients of 4th order polynomial initial stress-strain curve

(b) Joints in Aluminum Alloy/Aluminum wires

This test shall be performed as per the method given in IEC-61089.

(c) Ultimate Tensile Strength & Longitudinal Smoothness Test:

When the dies are ready for the conductor but before regular fabrication commences, a sample of conductor having a minimum length of 12 meters shall be prepared and tested in the presence of the inspectors to ensure compliance with outside diameter, lay, weight, ultimate strength, tightness of stranding, and longitudinal smoothness requirements. The conductor shall comply with the requirements of ASTM B232 and provisions of these Specifications.

The ultimate strength and longitudinal smoothness shall be carried out on a minimum length of 12 meter of conductor. The Manufacturer shall supply and install the compression fittings required at the ends of the sample for testing.

During the test, the conductor shall be checked for longitudinal smoothness as follows:

When the conductor is subjected to a tension of 50% of rated ultimate strength of conductor, a straight edge not less in length than twice the lay of the surface layer

shall be placed parallel to the length of the conductor. The maximum variation from straight edge shall not exceed 10% of nominal aluminum strand diameter.

At the end of the test, the nominal ultimate strength of the conductor shall be determined without the fracture of any wire at 95% of rated tensile strength when pulled steadily and continuously in a tensile machine whose moving head has a no-load speed of approximately, but not greater than 75 mm/minute.

The sample shall develop the ultimate tensile strength as calculated from procedure specified in ASTM B232.

9.2 SAMPLE TESTS ON INDIVIDUAL WIRES

Before stranding, the manufacturer should himself carry out tests on aluminum and steel wires separately to satisfy that the product complies with the specified requirements. Aluminum wires shall conform to the requirements of ASTM B230 and steel wires shall conform to the requirements of ASTM B498.

The Engineer shall witness the following tests on the finished product to satisfy that the product complies with the specifications.

A. Aluminum Wires

1. Finish and Appearance
2. Diameter
3. Tensile Test (strength and elongation) *
4. Bending properties (Wrapping Test)
5. Resistivity

**Additional tensile test(s) of jointed aluminum strands may be made at the discretion and satisfaction of the Engineer.*

B. Zinc Coated Steel wires

1. Finish and Appearance
2. Diameter
3. Stress at 1% extension (as per IEC-61232)
4. Tensile Test
5. Ductility Test
6. Bending properties (Wrapping Test)
7. Coating Test
8. Adherence of Coating Test
9. Uniformity of Zinc coating Test (Preece Test)
10. Purity of Zinc coating (99.995%)

(a) **Wrapping Test:**

This test shall be made on both aluminum and zinc coated steel wires.

(i) For Aluminum wires

One specimen cut from each of the sample of aluminum wire shall be wrapped round a mandrel of diameter equal to the wire diameter to form a

close helix of eight turns. Six turns shall then be unwrapped and again closely wrapped. The wire shall not break or show any cracks.

(ii) For Zinc-coated Steel wires

One specimen cut from each of the sample of zinc-coated steel wire shall be wrapped round a mandrel of diameter equal to the wire diameter to form a close helix of eight turns. The wire shall not break.

(b) **Ductility Test:**

This test shall be made on Zinc-coated Steel wires only as follows:

One specimen cut from each of the sample shall be gripped at its ends in two vices, one of which shall be free to move longitudinally during the test. A small tensile load, not exceeding 2% of the breaking strength of the wire, shall be applied to the sample during testing. The specimen shall be twisted by causing one of the vices to revolve until fracture occurs and the number of twists shall be indicated by a counter or other suitable device. The rate of twisting shall not exceed 60 rev/min.

When tested before stranding, the number of complete twists before fracture occurs shall be equivalent to not less than 18 on a length equal to 100 times the diameter of the wire. The fracture shall show a smooth surface at right angles to the axis of the wire.

When tested after stranding, number of complete twists before fracture occurs shall be equivalent to not less than 16 on a length equal to 100 times the diameter of the wire. Fracture shall show a smooth surface at right angles to axis of wire.

As an alternative to the ductility test, an elongation test may be made on zinc-coated steel wires. The elongation of one specimen cut from each of the sample shall be determined. The specimen shall be straightened by hand and an original gauge length of 200 mm shall be marked on the wire. A tensile load shall be applied gradually. The rate of separation of jaws of the testing machine shall not be less than 25 mm/min and not greater than 100 mm/min and the elongation shall be measured after the fractured ends have been fitted together. If the fracture occurs outside the gauge marks, or within 25 mm of either mark and the required elongation is not obtained, the test shall be disregarded and another test made. When tested before stranding, the elongation shall be not less than 4%. When tested after stranding, the elongation shall be not less than 3.5%.

Note: *The choice between a ductility test and an elongation test is to be at the discretion of the Engineer and the choice of one test or the other in no way prejudices the quality of the steel used.*

(c) **Uniformity of Zinc Coating Test (Preece Test):**

Test Solution

The copper sulphate solution shall be made by dissolving approximately 36 parts by weight of commercial copper sulphate crystals in 100 parts by weight of distilled water. Heat may be used to complete the solution. If heated, the solution

shall be allowed to cool. The solution shall then be shaken with an excess of powdered cupric hydroxide. The presence of an excess of powdered cupric hydroxide will be shown by the sediment of this reagent at the bottom of the vessel. The neutralized solution shall be allowed to stand for 24 hours and then filtered or decanted.

The test solution shall have a specific gravity of 1.186 at 18°C. To adjust a solution of improper specific gravity, add distilled water when the specific gravity is high and add copper sulphate solution of a higher specific gravity when the test solution is low in specific gravity. Wire specimens shall be tested in a glass container at least 50mm inside diameter for 2.75mm diameter wire and smaller, and at least 75mm inside diameter for wire larger in diameter than 2.75mm. The container shall be filled with fresh test solution to a depth of at least 100mm. This quantity of solution shall be used for the simultaneous testing of one to seven test specimens. The solution shall be discarded after completion of the test and fresh solution used for any additional tests.

The Sample

The test specimen shall be cleaned with a volatile organic solvent such as carbon tetrachloride or benzene; then rinsed with alcohol and finally, thoroughly washed with clean water and wiped dry with clean cloth. Test specimens shall be brought to a temperature of 15°C to 21°C prior to beginning of the test.

Test Method

The test specimen shall be immersed in the copper sulphate solution, which shall be maintained at a temperature of 18±2°C. The specimens shall remain in a fixed position in the solution for exactly 1 minute. If a ½ minute dip is specified, it shall be given to the specimens after completion of all of the 1min dips. There shall be no agitation of the solution during the immersion period and the specimen shall not be allowed to touch each other or the sides of the container. After each dip, the specimen shall be washed and wiped dry with a clean cloth. The rinse water may be ordinary clean water and shall have a temperature of from 15 to 21°C. In conducting a series of tests, the rinse water shall be changed often enough to ensure that it is reasonably free from copper sulphate. Before returning the specimens to the test solution they shall be well drained of excess rinse water and wiped dry with a clean cloth.

Successive dips of 1 min each shall be continued with washing and wiping of test specimens after each dip, until the specimens have withstood the required number of dips as specified in clause 5.1 or until the end point has been reached. The end point (disappearance of zinc coating) shall be recognized by the appearance of an adherent copper deposit on the steel or by the exposure of the bare steel if the deposit fails to form.

9.3 SAMPLE TESTS ON COMPLETE CONDUCTOR

The manufacturer shall carry out in addition to the tests specified in ASTM B232, any other tests specified elsewhere in this specification. A minimum 1.25 meter length sample of finished conductor shall be cut from the finishing end of the first

length in production between the capstan and the take-up reel. To preserve the proper condition of the sample, both ends shall be taped before cutting. This sample shall be checked for the following characteristics:

1. Verification of conductor construction, stranding and diameter
2. Finish and appearance*
3. Finished diameter
4. Length and direction of lay
5. Unit weight
6. Tensile strength
7. Electrical resistance
8. Verification of finished weight and length of conductor on a reel

(A) Finish and Appearance

The conductor shall be examined visually for good workmanship and general surface finish and shall generally conform to the requirements of the specification. The conductor will be initially checked for any scratches, joints, burrs, indentation, black and bare spots, projections, slackness, spacing between the individual wires, bird caging etc., The offered Lot will be rejected if any of the above-mentioned defects persist in the length of the conductor.

The conductor reels shall be visually and dimensionally checked to ensure that they confirm to the requirements of this specification. The reels shall be of sound construction and properly seasoned. Wet or termite effected reels will be rejected. Thick paper board shall be applied inside the flange and polypropylene sheets shall be applied on the drum of the wooden reels before winding of the conductor on the reels to avoid damage to the conductor. Polyethene sheets shall be wrapped over the conductor after winding. The reels without these accessories will be rejected.

The conductor will be wound on reels in a way so as to avoid scratching during re-winding of conductor; as such scratching persistently existing will result in rejection of conductor on that reel.

10. SAMPLING, ACCEPTANCE AND REJECTION

When the conductor sample is found to be satisfactory, 1.25 meter minimum length samples shall be taken from every 10th reel subsequently produced and the above characteristics mentioned in these specifications shall be checked and witnessed by the Engineer. If on testing the sample from any drum fails to conform to the requirements of the specifications, two additional samples shall be taken from the same drum for another testing. If any one of these samples shall not conform to the specified requirements the drum shall be rejected. Samples then shall be taken from all the drums offered for acceptance and shall be tested. If sample from a drum does not meet the requirements, that drum shall be rejected. If number of rejected drums exceeds 20% of the offered lot, the complete lot shall be rejected.

For checking of tensile strength of the complete conductor, a minimum length of 12 meters of conductor shall be cut off from reels arbitrarily selected by the

Engineer, but no more than one reel out of every 100 will be chosen unless a production run comprises less than 100 reels of conductor. In that case, the Engineer reserves the right to test one sample from each production run of less than 100 reels. These samples shall be checked for the ultimate strength and longitudinal smoothness following the procedure described in Clause 9.1 (c) of this specification.

If a conductor test sample does not meet the specified tensile strength requirements, further samples shall be tested from reels number x , $x+10$ and $x-10$, where x is the reel number from which the rejected sample was taken.

If these three conductor samples meet the specification, the lot shall be accepted. If the sample x fails, this reel will be rejected and new samples shall be tested from reels $x+5$ and $x-5$. Conversely, if sample $x+10$ or $x-10$ fails further samples shall be tested from reels number x , $x+5$ and $x-5$, where x is now the reel number from which the subsequent rejected sample was taken. This process shall be repeated until all reels containing faulty material have been located and rejected.

For verification of finished weight and length of conductor, one percent (1%) reels of the offered lot shall be selected by the Engineer. The reel with conductor shall first be weighed. Then the conductor shall be completely rewound from the reel to verify its length with respect to the specified length on the packing list. The empty reel shall be weighed to check the total weight of conductor on the reel.

11. MARKINGS AND PACKING

Flange of the reel shall bear a non-corroding tag, written in English language, identifying the following:

- a. Type of conductor and code word
- b. Weight of conductor
- c. Length of conductor
- d. Stranding

Each reel shall be stenciled to show all information as follows:

- i. Manufacturer's name & country of origin
- ii. Year of manufacture & Contract No.
- iii. Reel number & Size
- iv. Gross weight
- v. Net weight
- vi. Consignee address
- vii. Direction of rolling with instruction "ROLL THIS WAY"
- viii. Instructions "DO NOT LAY FLAT"

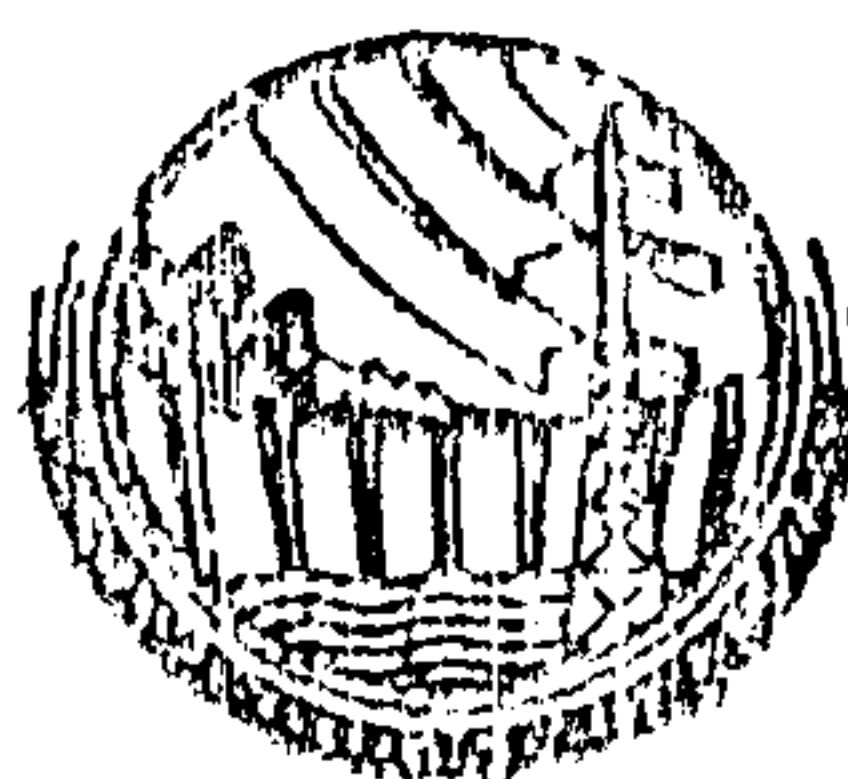
The overhead line conductor shall be furnished on non-returnable reels having mixture of steel and wood, protected by wood lagging or other suitable method against damage during shipment and to facilitate safe and easy field handling and long-term outdoor storage. Nails shall be fitted with proper care to avoid any contact with the conductor. The reels should be suitable to withstand the rigors of field installation of the conductor including tension stringing. The manufacturer

is required to follow the below given drawing for reel; however, it is the responsibility of the Manufacturer to ensure that the method of packing shall be strong enough to withstand wear and tear during sea/inland transportation and handling at site.

Methods of packing, marking and shipping shall be submitted to the Engineer for review and acceptance.

SPECIFICATION P-50:88
(UDC 621.315.5)

ALUMINIUM CONDUCTORS, STEEL - REINFORCED



PAKISTAN
WATER AND POWER DEVELOPMENT AUTHORITY
DESIGN DEPARTMENT (TAG)

SPECIFICATION P-50:88

(UDC 621.315.5)

ALUMINIUM CONDUCTORS, STEEL- REINFORCED

AMENDMENT NO. 1 DATED 12th FEBRUARY 90.

1. CLAUSE 2.4

Please add the words "Conductor is held vertically. With left-hand lay, the" at the end of third line of this clause.

2. CLAUSE 3.4

- i) Please add the word "a" in the parenthesis at the end of the heading of this clause.
- ii) Please add the word "a" after the words "co-efficient of resistance" in the second line of this clause.

3. CLAUSE 4.2

Please add the words "the value for the coefficient of linear expansion of" after the words "taken as" in the second line of this clause.

4. CLAUSE 5.1

Please add the word "dip" after the word "hot" in fourth line of this clause.

5. CLAUSE 5.1.3, TABLE-I

Please replace the words "Tensile strength" with the words "Tensile stress" in the third line of the heading of this table.

6. CLAUSE 6.1, TABLE-IV

Please replace the figure "45/3.38" with "54/3.38" for Cardinal Conductor in the last row and second column of this table.

7. CLAUSE 6.4.3, TABLE-V

- i) Please replace the heading of this table with the following:

No. of Wires in Conductor	Stranding Constants		Electrical Resistance
	Weight		
Aluminium Steel	Aluminium	Steel	

- ii) Please replace the value "0.091" with "6.091" in the second row and third column of this table.
- iii) Please delete the ninth row of this table which is also given hereunder:

" 30 / 60.67 7.032 0.03408"

8. CLAUSE 8.5

Please add the word "not" after the words "layer shall" in fifth line of this clause.

9. CLAUSE 9.2

Please replace the word "givne" in 10th line with "given".

10. CLAUSE 10.1

Please replace the word "then" in 1st line of this clause with "than".

11. CLAUSE 10.1 (ii)

- i) Please replace the word "Weight" in the 1st line of this sub clause with "Weigh".
- ii) Please replace the word "100 mm" in 5th line of this sub clause with "100 ml".
- iii) Please replace the words "-1950 d.r." in 10th line of page 11 with "-1950 d.r."

12. CLAUSE 10.3.1

Please replace the words "The specimens" in fourth & fifth lines of this clause with "Test specimens".

13. CLAUSE 11

- i) Please replace the formula for resistance at 20°C (R20) as under:

$$R20 = RT \left(\frac{1}{1 + a(T-20)} \right)$$

- ii) In the second last line of page 12, please write the word "a" in the blank space which is after the word "and" & on the left side of the sign of equality.

14. CLAUSE 12.2

Please replace the word "given" in 4th line with "giving".

Contd....3..

15. CLAUSE 13.2

Please delete the word "k" before the word "regardless" in the 1st line of this clause.

16. CLAUSE 14.1

Please add the sentence "The reels should be suitable for tension stringing and capable to withstand its rigours" after second sentence in the fifth line of this clause.

17. FIG-1, REEL DIMENSIONS

Please delete the 6th row in the table of Figure-1 for Rail Conductor which is also given hereunder:

"Rail NR1850 1850 70 900 1000 70 50 1800 2878"

C O N T E N T S

0. Foreword
1. Scope
2. Definitions
3. Standards for Hard-drawn Aluminium Wire
4. Standards for Steel Wire
5. Material
6. Dimensions and Characteristics
7. Joints
8. Stranding
9. Mechanical Tests
10. Galvanizing Tests
11. Resistivity Tests
12. Tests by Manufacturer
13. Acceptance and Rejection
14. Packing and Markings

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Reprinted on April, 1985
1st revised edition May, 1988

SPECIFICATION P-50:88
(UDC 621.315.5)

ALUMINIUM CONDUCTORS, STEEL - REINFORCED

0 FORL

0.1 This standard has been prepared by the Standards Directorate of Design Department of the Air Wing, WAPDA. It lays down Specification for Aluminium Conductors Steel-Reinforced (ACSR).

0.2 This edition supersedes P-50:79.

0.3 This Specification is intended for procurement of material and does not include provisions of contract.

0.4 This specification is subject to revision as and when required.

1 SCOPE

1.1 This specification covers concentric layers stranded conductors, made from round aluminium wire and round zinc coated steel core wires, for use as overhead electrical conductors.

2 DEFINITIONS

2.1 For the purposes of this specification the following definitions shall apply.

2.2 Aluminium Conductor, Steel-Reinforced

Conductor consisting of seven or more aluminium and zinc-coated steel wires built up in concentric layers. The centre wire or wires are of zinc-coated steel and the outer layers of aluminium.

2.3 Diameter

Mean of two measurements at right angles taken at the same cross-section.

2.4 Direction of lay

The direction of lay is defined as right-hand or left-hand. With right-hand lay, the wires conform to the direction of the central part of the letter "Z" when the wires conform to the direction of the central part of the letter "S" when the conductor is held vertically.

2.5 Lay Ratio

Ratio of the axial length of a complete turn of the helix formed by the wires of the stranded conductor, to the external diameter of the conductor.

3 STANDARDS FOR HARD DRAWN ALUMINIUM WIRE

3.1 Resistivity

The resistivity of aluminium wire depends upon its purity and its physical condition. For the purposes of this specification the maximum value permitted is 0.028264 ohm. sq. mm/m at 20°C and this value shall also be used as the standard resistivity for the purpose of calculation.

3.2 Density

At a temperature of 20°C, the density of hard-drawn aluminium wire is to be taken as 2.703 kg/dm³.

3.3 Coefficient of Linear Expansion

The coefficient of linear expansion of hard-drawn aluminium wire is to be taken as 23×10^{-6} per centigrade degree.

3.4 Constant-mass temperature Coefficient ()

At a temperature of 20°C, the "constant mass" temperature coefficient of resistance, of hard-drawn aluminium wire, measured between two potential points rigidly fixed to the wire, is to be taken as 0.00403 per centigrade degree.

4 STANDARDS FOR ZINC-COATED STEEL WIRE

4.1 Density

At a temperature of 20°C, the density of zinc-coated steel wire is to be taken as 7.80 kg/dm³.

4.2 Coefficient of Linear Expansion

In order to obtain uniformity in calculations, a value of 11.5×10^{-6} per centigrade degree may be taken as zinc-coated steel wires used for the cores of aluminium conductors, steel-reinforced.

5 MATERIAL

5.1 The conductor shall be constructed of hard-drawn aluminium and zinc-coated steel wires which have the mechanical and electrical properties herein. The coating on the zinc-coated steel wires may be applied by the hot process or the electrolytic process.

5.1.1 WAPDA, by specific orders, may require application of a grease containing petroleum and resin on the steel core as well as inner layers of aluminium strands which shall completely fill up the blanks left between the strands. The guaranteed dropping temperature of grease shall not be less than 100°C.

- 5.1.2 The wires shall be smooth and free from imperfections not consistent with good commercial practice.
- 5.1.3 The mechanical properties of hard-drawn aluminium wire shall be in accordance with Table-I given below. For wire of intermediate diameter, the minimum ultimate tensile stress shall be the same as that for the next larger diameter listed in Table-I.

TABLE - I

MECHANICAL PROPERTIES OF HARD-DRAWN ALUMINIUM WIRE

Nominal wire diameter mm	Minimum Ultimate Tensile Strength	
	Before Stranding	After Stranding
	Kg/sq.mm	Kg/sq.mm
1.25	20.4	19.4
1.50	19.7	18.7
1.75	19.2	18.2
2.00	18.8	17.9
2.25	18.4	17.5
2.50	18.0	17.1
2.75	17.6	16.7
3.00	17.2	16.3
3.25	16.9	16.0
3.50	16.7	15.9
3.75	16.5	15.7
4.00	16.3	15.5
4.25	16.3	15.5
4.50	16.2	15.4
4.75	16.2	15.4
5.00	16.2	15.4

5.2 Steel

- 5.2.1 The steel core wires shall be made from open hearth or electrical furnace steel with chemical composition specified in Table-II.

TABLE - II CHEMICAL COMPOSITION OF STEEL WIRE

Carbon, per cent	0.50 to 0.75
Manganese, per cent	0.50 to 1.10
Phosphorus, max, per cent	0.040
Sulfur, max, per cent	0.050
Silicon, per cent	0.10 to 0.30

- 5.2.2 The mechanical properties of the steel core wires shall be in accordance with Table-III. The steel core wire or wires shall be galvanized by hot dip process or electro-

lytic process to achieve the minimum weight of coating specified in Table-III. The zinc used for galvanizing shall be of not less than 99.5 percent purity.

For wire of intermediate diameter, the mechanical properties and zinc coating requirements shall be the same as those for the next larger diameter listed in Table-III.

TABLE-III MECHANICAL PROPERTIES AND ZINC COATING REQUIREMENTS FOR STEEL WIRE

Nominal Wire Diameter mm	Minimum stress at 1% extension kg/mm ²	Minimum tensile strength Before strand- kg/mm ²	Ultimate strength After strand- kg/mm ²	Minimum weight of zinc coating g/m ²	Minimum number of 1-minute dips
1.25	119.5	133.6	126.9	183	2
1.50	119.5	133.6	126.9	183	2
1.75	119.5	133.6	126.9	198	2
2.25	119.5	133.6	126.9	214	2.5
2.75	116.0	133.6	126.9	229	3
3.00	116.0	133.6	126.9	244	3.5
3.50	112.5	133.6	126.9	244	3.5
4.25	112.5	133.6	126.9	259	4
4.75	112.5	133.6	126.9	275	4

6 DIMENSIONS AND CHARACTERISTICS

6.1 Standard Sizes

The dimensions and characteristics of the conductors standardized for use by WAPDA are given in Table-IV.

TABLE-IV DIMENSIONS AND CHARACTERISTICS OF ACSSR

Code Word	Alumi- nium Conduc- tor	Steel Core	Comp- lete Conduc- tor	Diameter Steel Core mm	Cross area of alum- inum mm ²	Area of comp- lete cond- uctor mm ²	Rated ulti- mate stre- ngth kg	D.C. resis- tance at 20°C ohm/km	Weight kg/km
Gopher	6/2.36	1/2.36	7.08	2.36	26.25	30.62	980	1.093	106
Rabbit	6/3.35	1/3.35	10.05	3.35	52.88	61.69	1875	0.543	214
Dog	6/4.72	7/1.57	14.15	4.71	104.98	118.53	3225	0.273	394
Lynx	30/2.79	7/2.79	19.53	8.37	103.41	226.20	8192	0.158	842
Cuckoo	24/4.62	7/3.08	27.72	9.24	402.33	454.48	12385	0.072	1519
Rail	45/3.70	7/2.47	29.61	7.41	483.84	517.38	11874	0.060	1599
Cardinal	45/3.38	7/3.38	30.42	10.14	484.5	547.3	15262	0.060	1832

6.2 Tolerance on Nominal Diameter of Wires

6.2.1 Aluminium Wires

The aluminium wires shall not depart from the nominal

diameter by more than the following amounts.

Nominal Diameter	Tolerance
2.50 mm and greater	$\pm 1\%$
Less than 2.50 mm	± 0.025 mm

6.3 Zinc Coated Steel Wires

The zinc coated steel wires shall not depart from the nominal diameter by more than the following amounts.

Nominal Diameter	Tolerance
2.00 mm and greater	$\pm 2\%$
Less than 2.00 mm	$\pm 0.04\%$

6.4 Calculation of Conductor Properties

6.4.1 The properties of the conductors have been calculated in accordance with Clauses 6.4.2 to 6.4.4 below.

6.4.2 Increase in length due to stranding. When straightened out, each wire in any particular layer of a stranded conductor, except the central wire, is longer than the stranded conductor by an amount depending on the mean lay ratio of that layer.

6.4.3 Resistance and Weight of Conductor. In aluminium conductors steel-reinforced, the conductivity of the steel core is neglected and the resistance of the conductor is calculated with reference to the resistance of aluminum wires only. The resistance of any length of stranded conductor is the resistance of the same length of any one aluminium wire multiplied by a constant, as given in Table-V.

TABLE-V STRANDING CONSTANTS

No. of Wires in Conductor		Weight		Stranding Constants
Aluminium	Steel	Aluminium	Steel	Electrical Resistance
6	1	6.091	1.000	0.1692
6	7	6.091	7.032	0.1692
12	7	12.26	7.032	0.08514
18	1	18.34	1.000	0.05660
24	7	24.50	7.032	0.04253
26	7	26.56	7.032	0.03928
28	7	28.61	7.032	0.03649
30	7	30.67	7.032	0.03408
30	7	60.67	7.032	0.03408
30	19	30.67	19.15	0.03408
32	19	32.66	19.15	0.3189
45	7	45.98	7.032	0.02271
54	7	55.23	7.032	0.01894
54	19	55.23	19.15	0.01894

The weight of each wire in a length of stranded conductor, except the central wire, will be greater than that of an equal length of straight wire by an amount depending on the mean lay ratio of the layer. The total weight of any length of a conductor is therefore obtained by multiplying the weight of an equal length of straight wire by the appropriate constant given in Table-V above. The weight of the steel core and aluminium wires are calculated separately and added together.

- 6.4.4 Strength of Conductor. The strength of a conductor, in terms of strength of the individual component wires, may be taken to be the sum of the strengths of the aluminium wires calculated from the value of the aluminium ultimate tensile given in column 2 of Table-I plus the sum of the strengths of the steel wires calculated from the value of the minimum stress at 1% extension given in column 2 of Table-III.

For testing the ultimate tensile strength of a complete conductor, suitable fittings shall be applied to the ends of a sample of conductor which shall be not less than 5 m long and the assembly shall then be pulled in a suitable tensile machine. When so tested the conductor shall withstand at least 95% of its strength, calculated as indicated above.

7 JOINTS IN WIRES

7.1 Aluminium Wires

In aluminium conductors, steel-reinforced containing any number of aluminium wires, joints in individual aluminium wires are permitted in addition to those made in base rod or wire before final drawing, but no such joints shall be less than 15 m apart in the complete stranded conductor. Such joints shall be made by resistance or cold pressure butt welding. They are not required to fulfill the mechanical requirements for unjointed wires. Joints made by resistance butt welding shall, subsequent to welding, be annealed over a distance of at least 200 mm on each side of the joint.

7.2 Zinc-coated Steel Wires

No joints of any kind shall be permitted in the zinc-coated steel wires other than those made by resistance butt welding in the base rod before drawing.

8 STRANDING

- 8.1 The wires used in the construction of an aluminium conductor, steel-reinforced shall, before stranding, satisfy all the relevant requirements of this specification.

- 8.2 The lay ratio of the different layers shall be within the limits given in Table-VI.

TABLE-VI LAY RATIOS

Number of Wires	Aluminium wire diameter to steel wire diameter	Ratio	Lay Ratios for Steel Core				Lay Ratios for Aluminium Wires					
			6-Wire Layer	12-Wires Layer	Outside layer	Layer immediately beneath outside layer	Innermost Layer of Conductors with 3-aluminium wire layer					
Aluminium	Steel		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6	1	1.000	-	-	-	-	10	14	-	-	-	-
6	7	3.000	13	20	-	-	10	14	-	-	-	-
12	7	1.000	13	28	-	-	10	14	-	-	-	-
18	1	1.000	-	-	-	-	10	14	10	16	-	-
24	7	1.500	13	28	-	-	10	14	10	16	-	-
25	7	1.386	13	28	-	-	10	14	10	16	-	-
28	7	1.125	13	28	-	-	10	14	10	16	-	-
30	7	1.000	13	28	-	-	10	14	10	16	-	-
30	19	1.666	13	28	12	24	10	14	10	16	-	-
32	19	1.500	13	28	12	24	10	14	10	16	-	-
45	7	1.500	13	28	-	-	10	14	10	16	10	17
54	7	1.000	13	28	-	-	10	14	10	16	10	17
54	19	1.666	13	28	12	24	10	14	10	16	10	17

- 8.3 The ratio of the nominal diameter of the aluminium wires to the nominal diameter of the zinc-coated steel wires in any particular construction of the aluminium conductor, steel-reinforced, shall conform to the appropriate value given in column 3 of Table-VI.

- 8.4 In all construction, the successive layers shall have opposite directions of lay, the outermost layer being right-handed. The wires in each layer shall be evenly and closed stranded.

- 8.5 In a 12-wire steel core, the lay ratio of the 12-wire layer shall be not greater than the lay ratio of the 6-wire layer. Similarly in a conductor having multiple layers of aluminium wires, the lay ratio of any aluminium layer shall be greater than the lay ratio of the aluminium layer immediately beneath it.

9 MECHANICAL TESTS

9.1 Stress at 1% Extensions

This test shall be made on zinc-coated steel wires only.

One specimen cut from each of the samples shall be gripped in the jaws of a tensile testing machine. A load corresponding to the appropriate tensile stress given in column 2 of table-VII and an extensometer shall be applied on a 50 mm, 200 mm or 250 mm gauge length and adjusted to the appropriate initial setting given in column 3 (or 4 or 5) of table-VII.

For wire of intermediate diameter, the initial stress and the initial extensometer setting shall be the same as that for the next larger diameter listed in Table-VII.

The load shall then be increased uniformly until the extensometer indicates an extension of 0.5 mm in 50mm, 2.00 mm in 200 mm or 2.50 mm in 250 mm. At this point, the load shall be read, from which the value of the stress at 1% extension shall be calculated. The value obtained for the specimen shall be not less than the appropriate value given in column 2 of table-III.

TABLE-VII INITIAL STRESS AND EXTENSOMETER SETTING FOR DETERMINATION OF STRESS AT 1% EXTENSION

Nominal Diameter mm	Initial Stress kg./mm ²	Initial Setting of Extensometer		
		mm in 50 mm	mm in 200mm	mm in 250 mm
1.25	10	0.025	0.10	0.125
2.25	10	0.025	0.10	0.125
3.00	20	0.050	0.20	0.250
4.75	30	0.075	0.30	0.375

9.2 Tensile Test

This test shall be made on both aluminium and steel wires prior to and after stranding. The breaking load of the specimen cut from the sample shall be determined by means of a suitable tensile testing machine.

The load shall be applied gradually and the rate of separation of the jaws of the testing machine shall be not less than 25 mm/min and not greater than 100 mm/min.

When tested before stranding the ultimate tensile strength of the specimen shall be not less than the appropriate value given in column 2 of Table-I or column 3 of Table-III.

When tested after stranding the ultimate tensile strength, of the specimen shall not be less than the appropriate value given in column 3 of Table-I or column 4 of Table-III.

9.3 Ductility Test

This test shall be made on zinc-coated steel wires only.

- (a) One specimen cut from each of the sample shall be gripped at its ends in two vices, one of which shall be free to move longitudinally during the test. A small tensile load, not exceeding 2% of the breaking strength of the wire, shall be applied to the sample during testing. The specimen shall be twisted by causing one of the vices to revolve until fracture occurs and the number of twists shall be indicated by a counter or other suitable device. The rate of twisting shall not exceed 60 rev/min.

When tested before stranding, the number of complete twists before fracture occurs shall be equivalent to not less than 18 on a length equal to 100 times the diameter of the wire. The fracture shall show a smooth surface at right angles to the axis of the wire.

When tested after stranding, the number of complete twists before fracture occurs shall be equivalent to not less than 16 on a length equal to 100 times the diameter of the wire. The fracture shall show a smooth surface at right angles to the axis of the wire.

- (b) As an alternative to the torsion test, an elongation test may be made on zinc-coated steel wires. The elongation of one specimen cut from each of the sample shall be determined. The specimen shall be straightened by hand and an original gauge length of 200 mm shall be marked on the wire. A tensile load shall be applied as described in clause 9.2 and the elongation shall be measured after the fractured ends have been fitted together. If the fracture occurs outside the gauge marks, or within 25 mm of either mark, and the required elongation is not obtained, the test shall be disregarded and another test made. When tested before stranding, the elongation shall be not less than 4%. When tested after stranding, the elongation shall be not less than 3.5%.

NOTE: The choice between a torsion test and an elongation test is to be at the discretion of the manufacturer and the choice of one test or the other in no way prejudices the quality of the steel used.

9.4 Wrapping Test

This test shall be made on both aluminium and zinc-coated steel wires.

(i) For Aluminium Wires

One specimen cut from each of the sample of aluminium wire shall be wrapped round a mandrel of diameter equal to the wire diameter to form a close helix of eight turns. Six turns shall then be unwrapped and again closely wrapped. The wire shall not break or show any cracks.

(ii) For Zinc-coated Steel Wires

One specimen cut from each of the sample of zinc-coated steel wire shall be wrapped round a mandrel of diameter equal to the wire diameter to form a close helix of eight turns. The wire shall not break.

10 GALVANIZING TESTS

10.1 Determination of Weight of Zinc-coating

The specimen of galvanized wire shall be not less than 300 mm long and the weight of the specimen in grams shall be not less than its diameter in millimeters multiplied by 4.

The specimen shall be cleaned by dipping into a suitable solvent, such as benzene, and wiped dry with a clean, soft cloth.

Test Methods

Reagents

(i) Antimony Chloride Solution

Dissolve 20 grams of antimony trioxide or 32 grams of antimony chloride in 1000 ml of hydrochloric acid.

(ii) Hydrochloric Acid (Spec: gravity 1.19)

Weight the specimen to the nearest .01 g. The specimen shall then be stripped of the zinc-coating by complete immersion in any convenient volume of solution made by adding 5 ml of the antimony chloride solution to each 100 ml of hydrochloric acid. The same solution may be repeatedly used without further addition of antimony chloride solution, until the time for stripping becomes inconveniently long. The temperature of stripping solution shall at no time exceed 38°C. As soon as the violent chemical

action on the wire has ceased, the wire shall be removed from the acid, washed thoroughly in running water and wiped dry. The diameter of the wire shall then be determined to the nearest 0.025 mm by taking the average of two measurements at right angles to each other. The specimen shall then be weighed to the nearest 0.01 g.

Calculations

Weight of coating in grams per square metre of stripped wire surface = 1950 d.r.

Where d = diameter in millimetres of stripped wire

$$r = \frac{\text{original weight} - \text{stripped weight}}{\text{stripped weight}}$$

The weight shall be not less than the appropriate value given in column 5 of Table-III.

10.2 Test of Adherence of Zinc-coating

Zinc coated wire shall be capable of being wrapped at a rate not exceeding 15 rev/min in a close helix of at least eight turns round a cylindrical mandrel having a diameter of four times the diameter of the wire for wires of diameter upto and including 3.5 mm and five times the diameter of the wire for wires greater than 3.5 mm. The zinc coating shall remain firmly adherent to the steel and shall not crack or flake to such an extent that any zinc can be removed by rubbing with bare fingers.

10.3 Test for Uniformity of Zinc-Coating

Test Solution

The copper sulphate solution shall be made by dissolving approximately 36 parts by weight of commercial copper sulphate crystals in 100 parts by weight of distilled water. Heat may be used to complete the solution shall be allowed to cool. The solution shall then be shaken with an excess of powdered cupric hydroxide. The presence of an excess of cupric hydroxide will be shown by the sediment of this reagent at the bottom of the vessel. The neutralized solution shall be allowed to stand for 24 hours and then filtered or decanted.

The test solution shall have a specific gravity of 1.186 at 18°C. To adjust a solution of improper specific gravity, add distilled water when the specific gravity is high and add a copper sulphate solution of a higher specific gravity when the test solution is low in specific gravity. Wire specimens shall be tested in a glass container at least 50 mm inside diameter for 2.75 mm dia. wire and smaller, and at least 75 mm inside diameter for wire larger in diameter than 2.75 mm dia. The con-

Container shall be filled with fresh test solution to a depth of at least 100 mm. This quantity of solution shall be used for the simultaneous testing of one to seven test specimens. The solution shall be discarded after completion of the test and fresh solution used for any additional tests.

10.3.1 The Sample

The test specimen shall be cleaned with a volatile organic solvent such as carbon tetrachloride or benzene, then rinsed with alcohol and finally, thoroughly washed with clean water and wiped dry with clean cloth. The specimens shall be brought to a temperature of 15°C to 21°C prior to beginning of the test.

10.3.2 Test Method

The test specimen shall be immersed in the copper sulphate solution, which shall be maintained at a temperature of 18±2°C. The specimens shall remain in a fixed position in the solution for exactly 1 minute. If a 1/2 minute dip is specified, it shall be given to the specimens after completion of all of the 1 min. dips. There shall be no agitation of the solution during the immersion period and the specimen shall not be allowed to touch each other or the sides of the container. After such dip, the specimen shall be washed and wiped dry with a clean cloth. The rinse water may be ordinary clean up water and shall have a temperature of from 15 to 21°C. In conducting a series of tests, the rinse water shall be changed often enough to ensure that it is reasonably free from copper sulphate. Before returning the specimens to the test solution they shall be well drained of excess rinse water and wiped dry with a clean cloth.

Successive dips of 1 min. each shall be continued with washing and wiping of the test specimens after each dip, until the specimens have withstood the required number of dips specified in the column 6 of Table-III or until the end point has been reached.

11 RESISTIVITY TEST

This test shall be made on aluminium wires only. The electrical resistance of specimen shall be measured at temperature which shall be not less than 10°C nor more than 30°C. The measured resistance shall be corrected to value at 20°C by means of the formula.

$$R_{20} = R_T \left(\frac{1}{1 + \alpha_r (T - 20)} \right)$$

Where T = Temperature of measurement in °C

R_T = Resistance at T°C

R_{20} = Resistance at 20°C

and α_r = Constant mass temperature coefficient of resistance (=0.00403)

The resistivity at 20°C shall then be calculated from the resistance at 20°C.

The resistance at 20°C shall not exceed 0.028264 ohm.
mm²/m.

12 TESTS BY MANUFACTURER

12.1 Samples for tests specified in clauses 9, 10 and 11 shall be taken by the manufacturer, before stranding, from not less than 10% of the individual lengths of:

- i) Aluminium wire
- ii) Zinc-coated steel wires

which will be included in anyone consignment of stranded conductor. For the tests specified in clauses 9, 10 & 11 one sample sufficient to provide one test specimen for each of the appropriate tests, shall be taken from each of the selected lengths of wires.

12.2 Visual inspection and verification of dimensions shall be carried out as routine tests on wires and complete conductor. The manufacturer shall furnish certificate given the results of the tests made on samples taken in accordance with sub-clause 12.1.

13 ACCEPTANCE AND REJECTION

13.1 The manufacturer shall divide each consignment into lots for inspection. These lots shall be so selected that material in a lot is of reasonably uniform quality and as far as possible, is manufactured at the same time and under the same conditions. The manufacturer shall keep sufficient production records to ensure that this can be done regularly. A lot may contain any number of lengths upto a maximum of 150.

13.2 From each lot, regardless of its size, samples of wires shall be taken at random from lengths of stranded conductor selected from approximately 10% of the lengths included in anyone consignment. For the tests specified in clauses 9, 10 & 11 one sample sufficient to provide one specimen for each of appropriate tests shall be taken from each strand of the conductor in each of the selected lengths.

13.3 The lot shall be accepted if for each test, the sample complies with the requirements of clauses 13.4 and 13.5.

13.4 If in any test, at most one specimen fails the sample shall be considered acceptable for that test.

13.5 If two specimens fail in any test, a further sample in accordance with clause 13.2, shall be taken from the lot, and the particular test repeated. If there are

no further failures the sample shall be considered acceptable for the test.

13.6 If in any test three or more specimens fail, the entire lot shall be rejected.

13.7 The manufacturer shall afford to the inspector all necessary test facilities and assistance for carrying out the tests. The facilities shall be provided free of charge.

14 PACKING AND MARKING

14.1 ACSR stranded conductor shall be supplied on standard wooden reels as per fig 1. The reels shall be made from high quality wood and shall be of sound construction, able to withstand the usual rigours of transportation and field construction. The complete periphery of the reels apart from being protected by heavy wooden lagging nailed at each end of the reel flanges as per fig 1, shall also be bound by two steel straps. The wooden reels shall be given two brush coats of 5 percent pentachlorophenol solution in oil before winding of conductor. The conductor shall be wound tightly.

14.2 The conductor shall be supplied in lengths specified in table of fig 1. Each reel shall contain either one or two lengths only as specified. A tolerance of plus or minus 5 percent is permitted on the conductor length. Additionally it shall be permissible to supply not more than 5 percent of the lengths on any one order in random lengths, none of which shall be shorter than one third of the nominal lengths.

14.3 The manufacturer shall provide the following markings on the reels in legible and indelible letters.

- 1) Manufacturer's name and designation
- 2) Conductor designation
- 3) Address of the consignee and purchase order number
- 4) Serial number of the reel

14.4 The manufacturer shall stamp the following information on metallic plates which shall be securely nailed to the reel.

- 1) Size and designation of ACSR stranded conductor.
- 2) Net weight, tare weight and gross weight, in kg.
- 3) Total length of the conductor on the reel, in metres.
- 4) Serial number of the reel

14.5 Both sides of the reel shall have an arrow mark indicating the direction of rolling.

14.6 All markings shall appear on both sides of the reel in the positions indicated in figure 1.

Encls: Fig: 1.

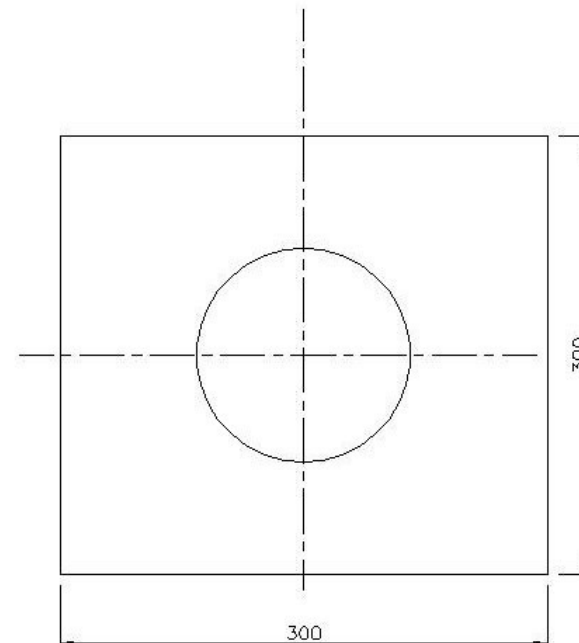
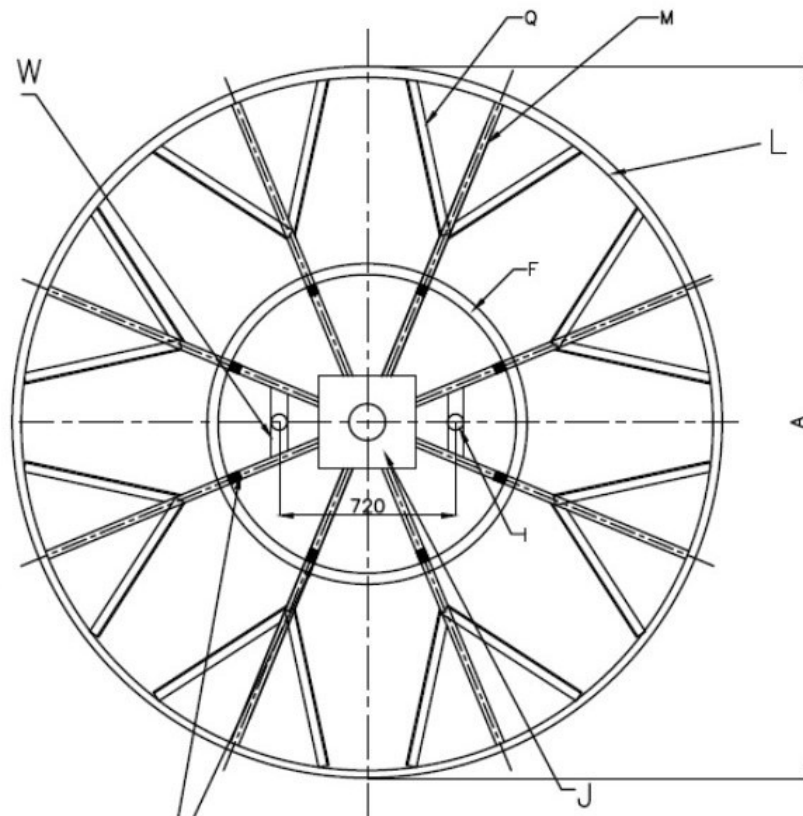
REEL SPECIFICATION

ITEM	DESCRIPTION	DIMENSIONS (mm)
A	FLANGE DIAMETER	2200
B	TRAVERSE	1220
C	DRUM DIAMETER	1020
D	REEL OVERALL WIDTH	1370
E	FLANGE THICKNESS	50
F	No. OF INNER RING AND SIZE	2&L 50X50X5
G	No. OF CENTRE SUPPORT AND SIZE	2&L 50X50X5
H	ARBOR HOLE DIAMETER	130
I	No. OF DOG HOLES (BOTH SIDES) & DIAMETER	2X2X40
J	No. OF SPINDLE PLATE, SIZE AND THICKNESS	2X300X10
K	NO. OF TIE ROD & DIAMETER	8 x 20
L	Outer Ring DEFORMED/T Steel no.&Size	2& T 75x37x5
M	NO. OF ANGLE BAR AND SIZE	2X8&L50X50X5
N	DRUM CYLINDER PLATE THICKNESS	30
O	WOODEN SIDE PLATE THICKNESS	35
P	LENGTH OF TIE ROD	1450
Q	NO.& SIZE OF AUXILIARY SUPPORT ANGLE BAR	2x16&L40x40x3
W	NO. OF DOG HOLE PLATES & THICKNESS	2X2X50X5
	WOODEN LAGGING THICKNESS	35
	REEL CAPACITY (meters)	3200

NOTES:-

- 1 - THE REEL IS DESIGNED TO WITHSTAND DAMAGE OR LOSS FROM REPEATED HANDLING, EXTREMES OF CLIMATE DURING TRANSPORTATION AND STORAGE AT SITE AND RIGOURS OF TENSION STRINGING OPERATIONS.
- 2 - THESE DIMENSIONS ARE FOR STEEL REELS STRUCTURE WITH WOODEN DRUM STAVES, SIDE PLATES AND LAGGING.
- 3 - SPINDLE PLATES ARE WELDED WITH STEEL STRUCTURE OF REEL.
- 4 - THE CONTROL SUPPORT ARE MADE OF STEEL.
- 5 - THE WOOD SHALL BE SEASONED AGAINST SHRINKAGE AND TO PROTECT AGAINST MOISTURE, ROT, FUNGUS, TERMITE AND INSECTS.
- 6 - WOOD MUST BE DRY AND PLAIN ON ALL SIDES.
- 7 - DRUM WILL BE WRAPPED WITH MOISTURE RESISTANT PROTECTIVE COVERING OF SOLID FIBER BOARD.
- 8 - INNER FLANGES (WOODEN SIDE PLATES) SHALL BE LINED WITH MOISTURE RESISTANT SOLID FIBER BOARD.
- 9 - TWO OUTER MOST LAYERS OF CONDUCTOR SHALL BE INTERLEAVED WITH MOISTURE RESISTANT PAPER AND OUTER LAYER ALSO COVERED WITH MOISTURE RESISTANT PAPER.
- 10 - SINGLE LAYER OF MOISTURE RESISTANT SOLID FIBER BOARD SECURED WITH STEEL BANDING SHALL BE WRAPPED OVERALL.
- 11 - LAGGING WILL BE SECURED BY THREE STEEL BANDS INTERMITTENTLY STAPLED TO THE LAGGING.

EMPLOYER:			
NATIONAL TRANSMISSION AND DESPATCH COMPANY LIMITED			
DRAWING TITLE:			
DRAWING FOR REEL			
PREPARED BY	DATE	DRAWING NO.	REV.
CHECKED/	Jan		00
APPROVED BY	2020		



DETAIL "J"

