



Energy Department
Government of the Punjab

BIDDING DOCUMENTS

FOR

HIRING OF CONTRACTOR FOR THE PROJECT

**“SOLARIZATION OF THE COMMISSIONERS
COMPLEXES IN PUNJAB”**

**SINGLE STAGE-TWO ENVELOPES
(SSTE) BIDDING PROCEDURE**

August 2021

Estimated Cost:65.800 million

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INVITATION FOR BIDS

INVITATION FOR BIDS

Date: _____

Bid Reference No.: _____

1. The Directorate of Power Projects (DOPP), Energy Department Govt. of Punjab (the “Employer”) intends to undertake a project namely “Solarization Of Commissioners Complexes”. The Employer invites sealed bids (Technical and Financial bids) on EPC basis from eligible firms licensed by the Pakistan Engineering Council for the following Works under this Project: Design, Procurement, Supply, Training, Installation, Testing, Commissioning, Energy Efficient retrofits, Net metering & post installation O&M services during the warranty period of two years at nine(9) complexes of commissioners in Punjab.
2. A complete set of Bidding Documents may be purchased by an interested bidder on submission of a written application to the above office and upon payment of a non-refundable fee of PKR 4000/-.
3. Bids complete in all respects as per the instructions contained in the bidding documents along with the bid security of Rs. 1.5 million in the form of Demand Draft, Pay Order or Bank Guarantee in the name of Director Projects, Directorate of Power Projects, Energy Department must be delivered at the address given below on **13-09-2021 at 11:00 AM**. Bid shall comprise a single package clearly indicating “Solarization Of Commissioners Complexes” containing two separate sealed envelopes, one envelop for technical proposal (01 original and 02 copies) and one envelop for financial proposal (01 original and 02 copies). Envelopes shall be marked as **“Technical Proposal SOLARIZATION OF COMMISSIONERS COMPLEXES”** and **“Financial Proposal “SOLARIZATION OF COMMISSIONERS COMPLEXES”** in bold and legible letters. A single stage two envelopes procedure as prescribed under Rule 38-2(a) of PPRA Rules, 2014 shall be followed for evaluation of bids. Technical Bids will be opened by the notified Committee at **11:30 AM** on the closing date in the presence of bidders’ representatives who choose to attend.
4. Bid shall be evaluated as per evaluation criteria mentioned in the bidding documents. The Companies scoring at least 65% marks in the Technical Proposal shall be eligible for further consideration in the Financial Evaluation. Failure to get 65% marks in the technical evaluation would make the company ineligible / disqualify for financial evaluation.

5. The marks between 0 and 100 will be given to the technical bids.
6. The financial bids of only technically qualified Companies shall be opened publically in the presence of bidder's representatives.
7. This bidding process will be governed under Punjab Procurement Rules, 2014, as amended from time to time and instructions of the Government of the Punjab received during the completion of the project.
8. Procuring agency/client/employer reserves the right to reject all bids or proposals at any time prior to the acceptance of a bid or proposal, the sufficient reasons for which will only be communicated on request but will not have obligation to provide any justification.
9. A pre-bid meeting will be held in the office of the Director Projects, Directorate of Power Project 206-Shadman-I Lahore on 07-09-2021 at 11:00 AM to discuss the queries(if any) related to the bidding documents.

Director Projects
Directorate of Power Projects
Energy Department
Government of the Punjab
206-Shadman I, Opposite Rehmania Masjid, Lahore
(Ph: 042-99203518-23, Fax: 042-99203519)
(Employer)

**INSTRUCTIONS
TO
BIDDERS & APPENDICES**

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INSTRUCTIONS TO BIDDERS AND APPRNDICES

(A) GENERAL

IB.1 Scope of Bid and Source of Funds

1.1 Scope of Bid

The Directorate of Power Projects (DOPP), Energy Department Govt. of Punjab (hereinafter called “the Employer”) wishes to receive bids on EPC/Turnkey basis for On-Grid Solar Energization for Commissioner Complexes in Punjab.

The Works to be executed under this Contract comprise Design, Construct, Pre-Shipment testing, Supply, Installation, testing & commissioning of On-Grid Solar Energization for Commissioner Complexes in Punjab on EPC/Turnkey basis.

A detailed scope of work has been furnished along with this document. The successful Bidder will be expected to complete the Works within the stipulated period of **16 months** as specified in these Bidding Documents. Commissioner Complexes Multan, Bahawalpur, DG Khan and Sahiwal will be solarized in first 8 months and Commissioner Complexes Lahore, Gujranwala, Rawalpindi, Faisalabad and Sargodha will be solarized in the next 8 months.

Bidders must quote prices for the complete scope of work. Any Bid covering partial scope of work will be non-responsive, pursuant to Clause IB.24.

1.2 Source of Funds

The Employer has received funds from the Energy Dept, Govt of Punjab: through **Annual Development Program** and it is intended that part of the proceeds of the funds will be applied to eligible payments under the Contract for which these Bidding Documents are issued.

IB.2 Eligible Bidders

- 2.1 Bidding is open to all firms having registration with Security & Exchange Commission of Pakistan (SECP) and Pakistan Engineering Council (PEC) in appropriate category having relevant code.

IB.3 Eligible Goods and Services

- 3.1 All Goods & ancillary Services to be supplied under this Contract shall have their origin in eligible countries as per Appendix ‘A’ to Instructions to Bidders and all expenditures made under the Contract will be limited to such Goods and Services.
- 3.2 For purpose of this Clause, “origin” means the place where the Goods are mined, grown or produced or from where the ancillary services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its

components.

- 3.3 The origin of Goods and Services is distinct from the nationality of the Bidder.

IB.4 Cost of Bidding

- 4.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding process.

(B) BIDDING DOCUMENTS

IB.5 Contents of Bidding Documents

- 5.1 In addition to Invitation for Bids, the Bidding Documents are those stated below, and should be read in conjunction with any Addenda issued in accordance with Clause IB.7.

1. Instructions to Bidders (ITB) with Appendices to ITB
2. Letter of Technical Bid & Schedules to Bid
Schedules to Bid are the following:
 - (i) Schedule A: Specific Works data
 - (ii) Schedule B: Proposed Organization for the Project
 - (iii) Schedule C: Method of Performing Works
 - (iv) Schedule D: Proposed Programme of Works
 - (v) Schedule E: Work to be Performed by Subcontractors
 - (vi) Schedule F: Deviations from Technical & Contractual Provisions
 - (vii) Schedule G: Specific Operation/Plant and Equipment Details
 - (viii) Schedule H: Specimen JV Agreement
 - (ix) Schedule I: Past Performance and Present Commitments
3. Letter of Price Bid & Schedules to Bid
Schedules to Bid are the following:
 - (i) Schedule J: Integrity Pact
 - (ii) Schedule K: Site wise Project Payments
 - (iii) Schedule L: Lump Sum Cost Breakup for Major Cost Items
4. Schedule of Prices
5. Preamble to Conditions of Contract
6. General Conditions of Contract (GCC)
7. Particular Conditions of Contract (PCC)
8. Standard Forms

Forms include the following:

- (i) Form of Bid Security
- (ii) Form of Contract Agreement
- (iii) Form of Performance Security
- (iv) Form of Bank Guarantee for Advance Payment
- (v) Indemnity Bond for Secured Advance

9. Specifications - Special & Technical Provisions

10. Drawings

5.2 The Bidders are expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of Bid submission will be at the Bidders own risk. Pursuant to Clause IB.24, Bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

IB.6 Clarification of Bidding Documents

6.1 A prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Employer with a copy to the Engineer in writing or by e-mail at the address:

Director Projects

Directorate of Power Projects

Energy Department

Government of the Punjab

206-Shadman1, Opposite Rehmania Masjid , Lahore

(Ph: 042-99203518-23, Fax: 042-99203519)

Email: dopp.dp@energy.punjab.gov.pk & dopp.dd@energy.punjab.gov.pk

Employer will examine the request for clarification of the Bidding Documents which it receives not later than three (03) days prior to the deadline for the submission of bids and if needed will issue the clarification/amendment of the Bidding Documents at least two (02) days before the date of submission of Bids (without identifying the source of enquiry) to all prospective bidders who have purchased the Bidding Documents.

IB.7 Amendment of Bidding Documents

7.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by issuing addendum.

7.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 7.1 hereof, and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective Bidders shall acknowledge receipt of each addendum in writing to the Employer. The Bidder shall also confirm in the Form of Bid that the information contained in such addenda have been considered in preparing his Bid.

7.3 To afford prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may at its discretion extend the

deadline for submission of Bids in accordance with Clause IB.19.

(C) PREPARATION OF BIDS

IB.8 Language of Bid

- 8.1 The Bid prepared by the Bidder and all correspondence and documents relating to the Bid, exchanged by the Bidder and the Project Manager/Engineer shall be written in the English language, provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by an English translation of its pertinent passages in which case, for purposes of interpretation of the Bid, the English translation shall govern.

IB.9 Documents Comprising the Bid

- 9.1 The Bid prepared by the Bidder shall comprise the following components:
- (a) Covering Letter
 - (b) Letters of Bids duly filled, signed and sealed, in accordance with Clause IB.17.
 - (c) Schedules (A to L) to Bid duly filled and signed, in accordance with the instructions contained therein.
 - (d) Schedule of Prices completed in accordance with Clauses IB.11 and IB.12 in separate sealed envelope.
 - (e) Bid Security furnished in accordance with Clause IB.15.
 - (f) Power of Attorney in accordance with Clause IB 17.5.
 - (g) Joint Venture Agreement (if applicable). A foreign Bidder is entitled to bid only in a joint venture with a Pakistani constructor in accordance with the provisions of relevant PEC bye-laws.
 - (h) Documentary evidence established in accordance with Clause IB.13 that the Bidder is eligible to Bid and is qualified to perform the Contract if its Bid is accepted (past performance and present commitments to be filled in as per schedule I to Bid).
 - (i) Documentary evidence established in accordance with Clause IB.14 that the Plant and ancillary Services to be supplied by the Bidder are eligible Plant and Services and conform to the Bidding Documents.
 - (j) Bidders applying for eligibility for domestic preference in bid evaluation shall supply all information & evidence to establish the claim for domestic preference required to satisfy the criteria for eligibility as described in Clause IB.27. The particulars for domestic Goods prescribed in Appendix C to these Instructions shall also be filled in to substantiate claim for domestic preference.
 - (k) Any other documents prescribed in Particular Conditions of Contract or Technical Provisions to be submitted with the Bid.

IB.10 Letters of Bids and Schedules

- 10.1 The Bidder shall complete, sign and seal the Letters of Bids, Schedules (A to L, or as modified) to Bid and Schedule of Prices furnished in the Bidding Documents and shall also enclose other information as detailed in Clause IB.9.

IB.11 Bid Prices

- 11.1 The Bidder shall fill up the Schedule of Prices attached to these documents indicating the unit rates and prices of the Works to be performed under the Contract. Prices on the Schedule of Prices shall be entered keeping in view the instructions contained in the Preamble to the Schedule of Prices.
- 11.2 The Bidder shall fill in rates and prices for all items of the Works described in the Schedule of Prices. Items against which no rate or price is entered by a Bidder will not be paid for by the Employer when executed and shall be deemed covered by rates and prices for other items in the Schedule of Prices.
- 11.3 The Bidder's breakup of price components in accordance with Sub-Clause 11.1 above will be solely for the purpose of facilitating the comparison of Bids by the Employer and will not in any way limit its right to contract on any of the terms offered.
- 11.4 Unless otherwise stipulated in the Conditions of Contract, prices quoted by the Bidder shall remain fixed during the Bidder's performance of the Contract and not subject to variation on any account. When the Bidders are required to quote only fixed price(s), a Bid submitted with an adjustable price quotation will be treated as non-responsive, pursuant to Clause IB.24.
- 11.5 Any discount offered shall be valid for at least the period of validity of the Bid. A discount valid for lesser period shall be considered null and void.

IB.12 Currencies of Bid

- 12.1 Prices shall be quoted in Pak Rupees.
- 12.2 The currencies of payment shall be as stated in Particular Conditions of Contract.

IB.13 Documents Establishing Bidder's Eligibility and Qualifications

- 13.1 Pursuant to Clause IB.9, the Bidder shall furnish, as part of its Bid, documents establishing the Bidder's eligibility to Bid and its qualifications to perform the Contract if its Bid is accepted.
- 13.2 The documentary evidence of the Bidder's eligibility to Bid shall establish to the Employer's satisfaction that the Bidder, at the time of submission of its Bid is from an eligible source country as defined under Clause IB.2.
- 13.3 Bidder/Manufacturer must possess and provide evidence of its capability and the experience as stipulated in Bidding Data and the Qualification Criteria stipulated in the Bidding Documents.

- (a) **Pre-Shipment:** for supply of Goods under the Contract, the bidder shall provide test report from one of the internationally accepted independent laboratories–(Instructions to Bidders)
- (b) **Post-Shipment:** Successful bidder must provide test report for at least one sample of each item of BoQ from one of the approved laboratories within Pakistan.

13.4 (a) Bidder/Manufacturer must possess and provide evidence of the following experience:

- i. has successfully completed installation of solar system cumulative 1000 KW or above in last 5 years and one (1) project of 100 KW or above in hand.
- ii. Only those Bidder/Manufacturer are expected to participate who have ownership of the specific equipment/tools/machines specified in the Bidding Documents/NIT for satisfactory performance of any specialized job as required under the Contract.

Documentation regarding the Bidder’s experience on previous similar contracts must accompany with each Bid.

Bidder shall also submit proof of their financial capability to undertake the Contract.

In the event that the successful Bidder is a joint venture formed of two or more companies, the Employer requires that the parties to the joint venture accept joint and several liabilities for all obligations under the Contract.

Bidders shall furnish documentary evidence of qualification on the Form “Evidence of Bidder’s Capability” (Appendix B to these Instructions).

- (b) The Bidder should have an average annual turnover in the last five years equal to or more than Rs. 150 Million.

13.5 Joint Venture

In order for a Joint Venture to qualify:

- (a) At least one of the partners of joint venture shall satisfy the relevant experience criteria specified in Sub-Clause 13.4(a) hereinabove.
- (b) All firms comprising the joint venture shall be legally constituted and shall meet the eligibility requirement of Sub-Clause 2.1 hereof.
- (c) All partners of the joint venture shall at all times and under all circumstances be liable jointly and severally to Employer for the execution of the entire Contract in accordance with the Contract terms and conditions and a statement to this effect shall be included in the authorization mentioned under para (f) below as well as in the Form of Bid and Form of Contract Agreement (in case of a successful Bidder).
- (d) The Form of Bid, and in the case of successful Bidder, the Form of Contract Agreement, shall be signed so as to be legally binding on all partners.

- (e) One of the joint venture partners shall be nominated as being in-charge and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the joint venture partners.
- (f) The partner-in-charge shall be authorized to incur liabilities, receive payments and receive instructions for and on behalf of any or all partners of the joint venture.
- (g) A copy of the agreement entered into by the joint venture partners shall be submitted with the Bid stating the conditions under which it will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the Contract and can give valid receipts on behalf of the joint venture, the proportionate participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. No amendments / modifications whatsoever in the joint venture agreement shall be agreed to between the joint venture partners without prior written consent of the Employer (Refer Schedule -H).

IB.14 Documents Establishing Plant's Eligibility and Conformity to Bidding Documents

- 14.1 Pursuant to Clause IB.9, the Bidder shall furnish, as part of its Bid, documents establishing the eligibility and conformity to the Bidding Documents of all Plant and Services which Bidder proposes to perform under the Contract.
- 14.2 The documentary evidence of the Plant and Services eligibility shall establish to the Employer's satisfaction that they will have their origin in an eligible source country as defined under Clause IB.3. A certificate of origin issued at the time of shipment will satisfy the requirements of the said Clause.
- 14.3 The documentary evidence of the Plant and Services' conformity to the Bidding Documents may be in the form of literature, drawings and data and shall furnish:
 - (a) A detailed description of the Plant, essential technical and performance characteristics.
 - (b) Complete set of technical information, description data, literature and drawings as required in accordance with Schedule A to Bid, Specific Works Data. Drawings and data submitted must be in sufficient detail and clarity to permit the Employer to verify compliance with the provisions of the Bidding Documents. This will include but not be limited to the following:
 - (i) A sufficient number of drawings, diagrams, photographs, catalogues, illustrations and such other information as are necessary to illustrate clearly the significant characteristics such as general construction dimensions and other relevant information about the Plant to be furnished.
 - (ii) The approximate weight and dimension of the main components, a brief description of the principal materials and fabrication processes to be used and recommended methods of assembly.
 - (iii) Any other information which is required for evaluation purposes.

- (c) A clause-by-clause commentary on Technical Provisions, provided with the Bidding Documents, demonstrating the Plant's and Service's substantial responsiveness to those Specifications or a statement of deviations and exceptions to the provisions of the Technical Provisions as required in Schedule F to Bid.
- 14.4 For purpose of the commentary to be furnished pursuant to Sub-Clause 14.3(c) above, the Bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, designated by the Project Manager/Engineer in the Technical Provisions are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalogue numbers in its Bid, provided that it demonstrates to the Project Manager/Engineer's satisfaction that the substitutions are substantially equivalent or superior to those designated in the Technical Provisions. Copies of the standards proposed by the Bidder other than those specified in the Bidding Documents shall be furnished.

IB.15 Bid Security

- 15.1 Each Bidder shall furnish, as part of his Bid, a Bid Security of PKR 1.5 million
- 15.2 The Bid Security shall be, at the option of the Bidder, in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan in favor of the Employer valid for a period sixty (60) days beyond the bid validity date.
- 15.3 The Bid Security is required to protect the Employer against the risk of Bidder's conduct which would warrant the security's forfeiture, pursuant to Sub-Clause 15.7 hereof.
- 15.4 Any Bid not accompanied by an acceptable Bid Security shall be considered by the Employer as non-responsive, pursuant to Clause IB.24.
- 15.5 The Bid securities of unsuccessful Bidders will be returned upon award of contract to the successful Bidder or on the expiry of validity of Bid Security whichever is earlier.
- 15.6 The Bid Security of the successful Bidder will be returned when the Bidder has furnished the required Performance Security, pursuant to Clause IB.34 and signed the Contract Agreement, pursuant to Clause IB.35.
- 15.7 The Bid Security may be forfeited:
 - (a) if a Bidder withdraws his Bid during the period of Bid validity;
 - (b) if a Bidder does not accept the correction of his Bid Price, pursuant to Sub-Clause 24.2 hereof; or
 - (c) in the case of a successful Bidder, if he fails to:
 - (i) furnish the required Performance Security in accordance with Clause IB.34, or
 - (ii) sign the Contract Agreement, in accordance with Clause IB.35.

IB.16 Validity of Bids

- 16.1 Bids shall remain valid for Sixty (60) days after the date of Bid opening as prescribed in Clause IB.19.
- 16.2 In exceptional circumstances prior to expiry of original Bid validity period, the Employer may request the Bidders to extend the period of validity for a specified additional period which shall in no case be more than the original Bid validity period. The request and the responses thereto shall be made in writing. A Bidder may refuse the request without forfeiture of his Bid Security. A Bidder agreeing to the request will be required to extend the validity of his Bid Security for the period of the extension, and in compliance with Clause IB.15 in all respects in which case, the Employer will be obligated to compensate the Bidders, upon substantiation for their increase in costs (if it is a fixed price bid).

IB.17 Format and Signing of Bid

- 17.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.
- 17.2 All Schedules to Bid (A to L) are to be properly completed and signed.
- 17.3 No alteration is to be made in the Form of Bid nor in the Schedules thereto except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the Bid may be rejected.
- 17.4 Each Bidder shall prepare one (1) Original and two (2) Copies, of the documents comprising the bid as described in Clause IB.9 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.
- 17.5 The original and copy of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign (in the case of copy, Photostats are also acceptable). This shall be indicated by submitting a written Power of Attorney authorizing the signatory of the Bidder to act for and on behalf of the Bidder. All pages of the Bid and Schedules to Bid shall be initialed and stamped by the person or persons signing the Bid.
- 17.6 The Bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the Employer, or as are necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.
- 17.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their Bids and the Contract is to be sent.
- 17.8 Bidders should retain a copy of the Bidding Documents as their file copy.

(D) SUBMISSION OF BIDS

IB.18 Sealing and Marking of Bids

- 18.1 Each Bidder shall submit his Bid as under:
- (a) ORIGINAL and two (02) Copies of the original Technical Bid and Price Bid shall be separately sealed and put in separate envelopes and marked as such.
 - (b) The envelopes containing the ORIGINAL and Copies of both Technical Bids and Price Bids will be put in one sealed envelope and addressed/identified as given in Sub-Clause 18.2 hereof.
- 18.2 The inner and outer envelopes shall;
- (a) be addressed to the Employer at the address given in Sub-Clause 6.1 heretofore.
 - (b) bear the Project name, Contract No. and Date of opening of Bid.
 - (c) provide a warning not to open before the time and date for Bid opening.
- 18.3 The Bid shall be delivered in person or sent by registered mail at the address to Employer as mentioned in the Invitation to Bids.
- 18.4 In addition to the identification required in Sub-Clause 18.2 hereof, the inner envelope shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared “late” pursuant to Clause IB.20.
- 18.5 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

IB.19 Deadline for Submission of Bids

- 19.1 (a) Bids must be received by the Employer at the address specified in Invitation for Bids not later than the time and date stipulated in the Invitation for Bids.
- (b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the Bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of Bids.
 - (c) Where delivery of a Bid is by mail and the Bidder wishes to receive an acknowledgment of receipt of such Bid, he shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed Bid package.
 - (d) Upon request, acknowledgment of receipt of Bids will be provided to those making delivery in person or by messenger.
- 19.2 Bids submitted through telegraph, telex, fax or e-mail shall not be considered.
- 19.3 The Employer may, at his discretion, extend the deadline for submission of Bids by issuing an addendum in accordance with Clause IB.7, in which case all rights and obligations of the Employer and the Bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

IB.20 Late Bids

- 20.1 (a) Any Bid received by the Employer after the dead line for submission of Bids prescribed in Clause IB.19 will be returned unopened to such Bidder.
- (b) Delays in the mail, delays of person in transit, or delivery of a Bid to the wrong office shall not be accepted as an excuse for failure to deliver a Bid at the proper place and time. It shall be the Bidder's responsibility to determine the manner in which timely delivery of his Bid will be accomplished either in person, by messenger, courier service or by mail.

IB.21 Modification, Substitution and Withdrawal of Bids

- 21.1 Any Bidder may modify, substitute or withdraw his Bid after Bid submission provided that modification, substitution or written notice of the withdrawal is received by the Employer prior to the deadline for submission of Bids.
- 21.2 The modification, substitution or withdrawal of any Bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.18 with the outer and inner envelopes additionally marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL", as appropriate.
- 21.3 Withdrawal of a Bid during the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified in the Form of Bid may result in forfeiture of the Bid Security pursuant to Clause IB.15.

(E) BID OPENING AND EVALUATION

IB.22 Bid Opening

- 22.1 A committee consisting of nominated members by the Employer and by the Project Manager/Engineer will open the Bids, including withdrawals, substitution and modifications made pursuant to Clause IB.21, in the presence of Bidders' representatives who choose to attend, at the time, date and location stipulated in the Invitation for Bids. Technical Bids will be opened first. At the end of the evaluation of the Technical Bids, the Employer will invite Bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend opening of the Price Bids.
- 22.2 Envelopes marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" shall be opened and read out first and the name of the Bidder shall be read out. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause IB.21 shall not be opened.
- 22.3 The Bidder's name, Bid Prices, unit rates, any discount offered, Bid modifications, substitutions and withdrawals, the presence or absence of Bid Security, and such other details as the Employer at its discretion may consider appropriate, will be announced by the Employer at the Bid opening. The Employer will record minutes of Bid opening.

Any Bid Price or discount which is not read out and recorded at Bid opening will not be taken into account in the evaluation of Bid. Any discount offered by the Bidder on its quoted prices, shall only be considered if such discount is either shown on the duly filled-in, signed and stamped Form of Bid/Letter of price bid or on the Summary Page of the quoted amount for Lump sum contract/bill of

quantities as applicable. In case of any discrepancy or difference in the rate or amount of discount mentioned in the Form of Bid/Letter of price bid (as duly filled-in and signed), and on the Summary Page of the Priced BOQ, the discount shown on the Priced BOQ shall prevail. Discount, if offered, through a separate letter of discount submitted with the Bid, will not be entertained and shall be considered null & void.”

- 22.4 Discounts offered for lesser period than the Bid validity shall not be considered in evaluation.

IB.23 Clarification of Bids

- 23.1 To assist in the examination, evaluation and comparison of Bids, the Project Manager/Engineer may, at its discretion, ask the Bidder for a clarification of its Bid. The request for clarification and the response shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

IB.24 Preliminary Examination & Determination of Responsiveness of Bids

- 24.1 Prior to detailed evaluation pursuant to Clause IB.26, the Project Manager/Engineer will determine the responsiveness of the Bids as follows:
- (a) the Project Manager/Engineer will examine the Bids to determine whether;
 - (i) the Bid is complete and does not deviate from the scope,
 - (ii) any computational errors have been made,
 - (iii) required sureties have been furnished,
 - (iv) the documents have been properly signed,
 - (v) the Bid is valid till required period,
 - (vi) the Bid prices are firm during currency of contract if it is a fixed price bid,
 - (vii) completion period offered is within specified limits,
 - (viii) the Bidder/Manufacturer is eligible to Bid and possesses the requisite experience,
 - (ix) the Bid does not deviate from basic technical requirements; and
 - (x) the Bids are generally in order.
 - (b) A bid is likely not to be considered, if;
 - (i) it is unsigned and validity is less than specified,
 - (ii) it is submitted for incomplete scope of work,
 - (iii) it indicates completion period later than specified,
 - (iv) it indicates that Works and materials to be supplied do not meet eligibility requirements,
 - (v) it indicates that Bid prices do not include the amount of income tax, and
 - (vi) Alteration in Form of Bid as per IB.17.3.

- (c) A bid will not be considered, if;
 - (i) it is not accompanied with bid security,
 - (ii) it is submitted by a Bidder who has participated in more than one Bid,
 - (iii) it is received after the deadline for submission of Bids,
 - (iv) it is submitted through fax, telex, telegram or email,
 - (v) it indicates that prices quoted are not firm during currency of the contract whereas the Bidders are required to quote fixed price(s),
 - (vi) the Bidder refuses to accept arithmetic correction,
 - (vii) it is materially and substantially different from the Conditions/ Specifications of the Bidding Documents.

It is after review and determination of the responsiveness as per above that further action on technical evaluation will be taken.

24.2 Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between the words and figures the amount in words shall prevail. If there is a discrepancy between the total Bid price entered in Form of Price Bid and the total shown in Schedule of Prices Summary, the amount stated in the Form of Price Bid will be corrected by the Employer/Project Manager/Engineer in accordance with the Corrected Schedule of Prices.

If the Bidder does not accept the corrected amount of Bid, his Bid will be rejected and his Bid Security forfeited.

24.3 Prior to the detailed evaluation, pursuant to Clause IB.26 the Employer/Project Manager/Engineer will determine the substantial responsiveness of each Bid to the Bidding Documents. For purpose of these Clauses, a substantially responsive Bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviations.

A material deviation or reservation is one:

- (i) which affect in any substantial way the scope, quality or performance of the Works;
- (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the Bidder's obligations under the Contract; or
- (iii) whose rectification/adoption would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

The Employer's/Project Manager/Engineer's determination of a Bid responsiveness will be based on the contents of the Bid itself without recourse to irrelevant evidence.

24.4 A Bid determined as substantially non-responsive will be rejected and will not

subsequently be made responsive by the Bidder by correction of the non-conformity.

- 24.5 Any minor informality or non-conformity or irregularity in a Bid which does not constitute a material deviation may be waived by Employer, as long as the waiver does not prejudice or affect the relative ranking of any Bidder.

IB.25 Conversion to Single Currency

- 25.1 To facilitate evaluation and comparison, the Project Manager/Engineer will convert all Bid Prices, expressed in the amounts in various currencies in which bid Price is quoted, to Pak Rupees at the telegraphic Transfer and Over Draft (TT&OD) composite selling exchange rate published/authorized by the State Bank of Pakistan and applicable to similar transaction, on the date of bid opening.

IB.26 Detailed Evaluation of Bids

- 26.1 Only the Bids previously determined to be substantially responsive pursuant to Clause IB.24 will be evaluated and compared in detail by the Employer/Project Manager/Engineer as per the requirements given hereunder:

26.2 Evaluation and Comparison of Bids

- (a) Bids will be evaluated for each item and/or complete scope of work.
- (b) Basis of Price Comparison

The prices will be compared on the basis of the Evaluated Bid Price pursuant to Para (e) herein below.

- (c) Technical Evaluation

- (i) It will be examined in detail whether the Plant/facility offered by the Bidder comply with the Technical Provisions of the Bidding Documents. For this purpose, design offered by the Bidder will be reviewed for which the Bidder's data submitted with the Bid under Schedule A to Bid (Specific Works Data) will be compared with the technical features/criteria of the Plant/facility detailed and prescribed by the Employer in these documents. Other technical information submitted with the Bid regarding the Scope of Work will also be reviewed including importations, if any, required.

- (ii) The criteria for evaluation of technical bid shall be as per following details:

S. No	Description	Total
1	Experience: (Maximum Marks 20) Experience in Solar Systems installation, testing and commissioning of Similar Nature of Projects. <ul style="list-style-type: none"> a) Full marks will be awarded for completed work of cumulative 1000 kWp and above within last five years. (Max: marks.15) (Work Orders and Completion Certificates should be attached.) b) Work in hand for 100 KWp or above will be awarded Five (05) mark. (Max: marks.5) (Work orders, satisfactory work report should be attached) 	20
	Expertise (Human Resource) (Maximum marks 20)	20

2	<p>a) Five (05) marks will be awarded for one Foreign Qualified Engineer having Master's Degree in Renewable Energy from a Foreign University and registered with PEC Submitted Tax Payment Challan of each Engineer of last month. (Max: marks.05)</p> <p>b) Five (05) marks will be awarded for one Qualified Engineer having Master's Degree in Renewable Energy / Electrical and registered with PEC Submitted Tax Payment Challan of each Engineer of last month. (Max: marks.5)</p> <p>c) Five (05) marks will be awarded for each Qualified Engineer having Bachelor's Degree in Electrical/Electronic Engineering and registered with PEC Submitted Tax Payment Challan of each Engineer of last month. (Max: marks.10)</p>	
3	<p>Financial : (Maximum marks 15)</p> <ul style="list-style-type: none"> Firms having average annual turnover certificate in original worth above Rs.150.00 million for last 5 years from a scheduled Bank. (Max: marks.15) <p>Note: The firm must obtain at least 50% marks.</p>	15
4	<p>Compliance to Product Specifications and Related Certifications (As Required in Technical Specifications): (Maximum marks 30)</p> <p>a) Thirty (30) marks will be awarded if Solar panels and inverter fulfills all the technical specifications and certifications as per given in the product specifications. (Max: marks.30)</p>	30
5	<p>a) Five (05) marks will be awarded if the firm has successfully installed 50 kWp or greater Solar Power System along with provision of Net Metering at a Commercial Building (Max: marks.05)</p>	5
6	<p>a) Five (05) marks will be awarded if the firm has trained electrical engineer from the inverter manufacturer whose inverters are being offered. (Max: marks.10)</p>	10

A: Pass;

B: Fail;

(>65%-Pass, <65%-Fail)

* To be specified by the Employer based on the project specific requirements.

(d) Commercial Evaluation

It will be examined in detail whether the Bids comply with the commercial/contractual conditions of the Bidding Documents. It is expected that no major deviation/stipulation shall be taken by the Bidders.

(e) Evaluated Bid Price

In evaluating the Bids, the Employer will determine for each Bid in addition to the Bid Price, the following factors (adjustments) in the manner and to the extent indicated below to determine the Evaluated Bid Price:

- (i) Making any correction for errors pursuant to Sub-Clause 24.2

hereof.

- (ii) Excluding Provisional Sums, if any, but including priced Day work.
- (iii) Making an appropriate adjustment for any other acceptable variation or deviation.

26.3 Evaluation Methods

Pursuant to Sub-Clause 26.2, Para (iii) only those bidder will qualify for next stage, which is financial opening, who will get minimum 65% score in technical bid evaluation.

- 26.4 If the Bid of the successful Bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the Contract, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Schedule of Prices to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in Clause IB.34 be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

IB.27. Domestic Preference

Not used.

IB.28 Process to be Confidential

- 28.1 Subject to Clause 23 heretofore, no Bidder shall contact Employer and/or Project Manager/Engineer on any matter relating to its Bid from the time of the Bid opening to the time the Bid evaluation result is announced by the Employer. The evaluation result shall be announced at least ten (10) days prior to award of Contract. The announcement to all Bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the Bids evaluated.
- 28.2 Any effort by a Bidder to influence Employer and/or Project Manager/Engineer in the Bid evaluation, Bid comparison or Contract Award decisions may result in the rejection of his Bid. Whereas any Bidder feeling aggrieved may lodge a written complaint not later than fifteen (15) days after the announcement of the Bid evaluation result; however, mere fact of lodging a complaint shall not warrant suspension of the procurement process.

(F) AWARD OF CONTRACT

IB.29. Post-Qualification

- 29.1 The Employer, at any stage of the bid evaluation, having credible reasons for or *prima facie* evidence of any defect in supplier's or contractor's capacities, may require the suppliers or contractors to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

Provided that such qualification shall only be laid down after recording reasons therefore in writing. They shall form part of the records of that bid evaluation report.

- 29.2 The determination will take into account the Bidder's financial, technical and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualification submitted under Appendix B to Instructions to Bidders "Evidence of Bidder's Capability" by the Bidder pursuant to Clause IB.13, as well as such other information as required under the Bidding Documents.
- 29.3 An affirmative determination will be a pre-requisite for award of the Contract to the lowest evaluated Bidder. A negative determination will result in rejection of that Bidder's Bid in which event, Employer will proceed to undertake a similar determination of the next lowest evaluated Bidder's capabilities to perform the Contract satisfactorily.

IB.30 Award Criteria

- 30.1 Subject to Clause IB.32, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such Bidder has been determined to be qualified to satisfactorily perform the Contract in accordance with the provisions of Clause IB.29.

IB.31 Employer's Right to Vary Quantities

- 31.1 Employer reserves the right at the time of award of Contract to increase or decrease by up to 15% the quantity of Plant and Services contained in the Schedule of Prices without any change in the unit price or other terms and conditions.

IB.32 Employer's Right to Accept any Bid and to Reject any or all Bids

- 32.1 Notwithstanding Clause IB.30, the Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids, at any time prior to award of Contract, without thereby incurring any liability to the affected Bidders or any obligation to inform the affected Bidders of the grounds for the Employer's action except that the grounds for its rejection shall upon request be communicated, to any Bidder who submitted a Bid, without justification of grounds. Rejection of all Bids shall be notified to all Bidders promptly.
- 32.2 No negotiation with the Bidder having been evaluated as lowest responsive or any other Bidder shall be permitted. However, the Employer may have clarification meeting(s) to get clarified any item(s) in the Bid evaluation report.

IB.33 Notification of Award

- 33.1 Prior to expiration of the period of Bid validity prescribed by the Employer, the Employer will notify the successful Bidder in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Employer will pay the Contractor in consideration of the design, execution and completion of the Works/facility by the Contractor as prescribed by the Contract (hereinafter

and in the Conditions of Contract called the “Contract Price”).

- 33.2 The Letter of Acceptance and its acceptance by the Bidder will constitute the formation of the Contract, binding the Employer and the Bidder till signing of the formal Contract Agreement.
- 33.3 Upon furnishing by the successful Bidder of a Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful and return their Bid securities.

IB.34 Performance Security

- 34.1 The successful Bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Conditions of Contract within a period of ten (10) days after the receipt of Letter of Acceptance.
- 34.2 Failure of the successful Bidder to comply with the requirements of Sub-Clauses IB.34.1, IB.35 or Clause IB.44 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

IB.35 Signing of Contract Agreement

- 35.1 Within seven (07) days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send to the successful Bidder the Form of Contract Agreement provided in the Bidding Documents, duly filled in and incorporating all agreements between the parties for signing and return it to the Employer.
- 35.2 The formal Agreement between the Employer and the successful Bidder shall be executed within seven (07) days of the receipt of such Form of Contract Agreement by the successful Bidder from the Employer.

(G) ADDITIONAL INSTRUCTIONS

IB.36 Instructions not Part of Contract

- 36.1 Bids shall be prepared and submitted in accordance with the above Instructions to Bidders including Additional Instructions which are provided to assist Bidders in preparing their Bids, and do not constitute part of the Bid or the Contract Documents.

IB.37 Contract Documents

- 37.1 The Documents which will be included in the Contract are listed in the Form of Contract Agreement set out in these Bidding Documents.

IB.38 Sufficiency of Bid

- 38.1 Each Bidder shall satisfy himself before bidding as to the correctness and sufficiency of his Bid and of the rates and prices entered in the Schedule of Prices. Except insofar as it is otherwise expressly provided in the Contract, the rates and prices entered in the Schedule of Price shall cover all his obligations under the Contract and all matters and things necessary for the proper completion of the Works/facility.

IB.39 One Bid per Bidder

- 39.1 Each Bidder shall submit only one Bid either by himself, or as a partner in a joint venture. A Bidder who submits or participates in more than one Bid will be disqualified and Bids submitted by him shall not be considered for evaluation and award.

IB.40 Bidder to inform himself

- 40.1 The Bidder is advised to obtain for himself at his own cost and responsibility all information that may be necessary for preparing the Bid and entering into a Contract for execution of the Works/facility. This shall include but not be limited to the following:
- (a) inquiries on Pakistani Income Tax to the Commissioner of the Income Tax and Sales Tax
 - (b) inquiries on customs duties and other import taxes, to the concerned authorities of Customs and Excise Department.
 - (c) information regarding port clearance facilities, loading and unloading facilities, storage facilities, transportation facilities and congestion at Pakistan seaports.
 - (d) investigations regarding transport conditions and the probable conditions which will exist at the time the Plant will be actually transported.

IB.41 Alternate Proposals by Bidder

Not Applicable.

IB.42 Site Visit and Local Conditions

- 42.1 Bidder must verify and supplement by his own investigations the information about site and local conditions. However, Employer will assist the Bidder wherever practicable and possible.
- 42.2 All Bidders are required to visit the site at their own expense to review the areas allocated for the Plant and the interfacing facilities, if any. Bidders may also wish to study local conditions, available facilities, communications, craft wages, roads and other transport facilities. Bidders shall also acquaint themselves with the relevant laws, rules, and regulations of Pakistan.
- 42.3 The Bidders and any of their personnel or agents will be granted permission by the Employer to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that the Bidders, their personnel and agents, will release and indemnify the Employer, his personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of such inspection.

IB.43 Pre-Bid Meeting

- 43.1 The Employer may, at his own or at the request of any prospective Bidder(s), hold a Pre-Bid meeting to clarify issues and to answer any questions on matters related

to the Bidding Documents. The date, time and venue of Pre-Bid meeting, if convened, shall be intimated through letter for invitation.

All prospective Bidders or their authorized representatives shall be invited to attend such a Pre-Bid meeting.

IB.44 Integrity Pact

- 44.1 The Bidder shall sign and stamp the Integrity Pact provided in Schedule-J to Bid in the Bidding Documents for all Federal Government procurement contracts exceeding Rupees ten million. Failure to provide such Integrity Pact shall make the Bid non-responsive.

IB.45 General Performance of the Bidders

- 45.1 The Employer reserves the right to obtain information regarding performance of the Bidders on their previously awarded contracts/works (Schedule-I to bid). The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, interalia, reject his bid and/or refer the case to the Pakistan Engineering Council. Upon such reference, PEC in accordance with its rules, procedures and relevant laws of the land take such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder and debarring him from participation in future bidding for similar works.

(H) APPENDICES

The Appendices to ITB are as given below:

- Appendix-A: Name of Eligible Countries
- Appendix-B: Evidence of Bidder's Capabilities

Appendices are given here below:

NAME OF ELIGIBLE COUNTRIES

All countries of the World with whom Islamic Republic of Pakistan has commercial relations.

EVIDENCE OF BIDDER'S CAPABILITY

Note: Bidders to provide the following information with the Bid separately and indicate herein its references where this information is available.

Sr.No.	Information to be Supplied	Bid References
1.	Name of Bidder, business address and country of incorporation.	
2.	Type of firm whether individually owned, partnership, corporation or joint venture and the names of its owners or partners.	
3.	(a) The annual reports giving general description of the firm, sort of business carried out, balance sheets, profit and loss statements, turn over and business done by the firm, duly authenticated, for the last three (3) years. Audited Balance Sheets for the preceding three (3) years and projected assets and liabilities for the next two (2) years shall be provided. <ul style="list-style-type: none"> i. Total value of works in hand on bid opening/preparation date. ii. Total value of works completed in last three years. 	
4.	(a) Has completed project of cumulative 1000 KW or above during the last five years and 1 project of 100 KW or above in hand.(Schedule-I to bid)	
5.	Location and address of manufacturing facilities as applicable.	
6.	Full description of factories owned and the annual manufacturing capacities of various items made therein.	
7.	Details of the facilities where the offered equipment is 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.

8. Detailed description of the quality control testing and research facilities. If the equipment is manufactured under license, the name of the licensee and details of the licensing arrangements, such as the duration of the license, the facilities provided to the Bidder by the licensee and whether future improvements are available or not etc. A copy of the license agreement may be attached. Quality Control/ Quality assurance plan must also be submitted.
9. (a) Names, qualifications and experience of the key technical personnel along with Resumes.
 - (b) (i) Nos. of total permanent Staff on roll of the company.
 - (ii) Nos. of total qualified engineers on roll of the company.
10. The time since the manufacturer has been in this business and the time since he has been doing work of similar nature.
11. The time since the particular equipment offered has been manufactured and the time for which it has been in service. The manufacturer shall have the experience stated in Sub-Clause IB 13.4(a).
12. Reference lists of similar works done by the Bidder in its country and abroad indicating the name of customer, description and quantity of product, year of supply and the approximate value. This is an important consideration and should be filled in with full details (attach separate sheet if needed)

Sr.No.	Information to be Supplied	Bid References
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13. Details of projects under execution and future contractual commitments (for each partner, in case of a joint venture).
14. (a) Banking reference, names of banks and addresses may be given to whom reference regarding financial capability of the Bidder may be made, with authority to make inquiries from the Bidder's bankers and clients regarding any financial and technical aspects (for each partner, in case of a joint venture).
(b) Detail of OD limit allowed to the firm by the bank for the business including amount and its validity period.
15. Health, Safety and emergency plan as well as Risk Management plan for the project.
16. Detailed/ Integrated work plan alongwith methodology to complete the assignment.
17. Training and Employment plan of local work force for which contractor is to at least have a budget of Rs..... for incurring expenditures on arranging such trainings for Consultant/Employer staff who are to maintain and operate the facility after construction. This is not reimbursable and contractor has to consider this amount included in his over heads.
18. Information on any litigation or arbitration resulting from contracts completed or under execution by the Bidder over the last ten (10) years. The information shall indicate the parties concerned, the matter of dispute, the disputed amounts and the result thereof (for each partner, in case of a joint venture).

**LETTER OF TECHNICAL BID
AND
SCHEDULES TO BID**

LETTER OF TECHNICAL BID AND SCHEDULES TO BID

Letter of Technical Bid

Schedules to Bid

- Schedule A to Bid: Specific Works Data
- Schedule B to Bid: Proposed Organization for the Project
- Schedule C to Bid: Method of Performing Works
- Schedule D to Bid: Proposed Programme of Works
- Schedule E to Bid: Works to be Performed by Subcontractors
- Schedule F-1 to Bid: Deviations from Technical Provisions
- Schedule F-2 to Bid: Deviations from Contractual Conditions
- Schedule G to Bid: Specific Operation/Plant and Equipment Detail
- Schedule H To Bid: Specimen JV Agreement
- Schedule I To Bid: Past Performance and Present Commitments

LETTER OF TECHNICAL BID

Bid Reference No.:

Package No.:

.....
.....
[Name of Works]

To:

.....
.....
.....

Gentlemen,

1. Having examined the Bidding Documents including Instructions to Bidders, Conditions of Contract, Specifications, Drawings, Schedules to Bid, Schedule of Prices and Addenda Nos. for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of and address
.....
.....
and being duly incorporated under the laws of hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said documents including Addenda thereto.
2. We understand that all the Schedules attached hereto form part of this Bid.
3. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount of drawn in the favor of, or made payable to the Employer, and valid for a period days beyond the period of validity of Bid.
4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the whole of the Works comprised in the Contract within the time(s) stated in Preamble to the Conditions of Contract.
5. We agree to abide by this Bid for the period of days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
7. We undertake, if our Bid is accepted to execute the Performance Security referred to in Clause 10 of Conditions of Contract for the due performance of the Contract.
8. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a Bid for the Works.

9. We do hereby declare that our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries *[insert the nationality of the Bidder, including that of all parties that comprise the Bidder if the Bidder is a consortium or association, and the nationality of each Subcontractor and Supplier]*.
10. We, including any subcontractors or suppliers for any part of the Contract, do not have any conflict of interest.
11. We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process.
12. We confirm, if our Bid is accepted, that all partners of the joint venture shall be liable jointly and severally for the execution of the Contract and the composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer. (Please delete in case of Bid from a single firm).

Dated this day of 200...

Signature in the capacity of duly authorized
to sign the Bid for and on behalf of

(Name of Bidder in Block Capitals)

(Seal of Bidder)

Bidder's Address

.....
.....
.....

Witness:

Signature:

.....

Name:

.....

Address:

.....
.....
.....

Occupation

.....

SPECIFIC WORKS DATA

The main technical data is prescribed in the relevant sections of the Technical Provisions. However, the Bidder may supplement the main technical data by providing hereunder other salient parameters including main plant make, capacity and suitability for the works under consideration to enable the Employer/Project Manager/Engineer to assess technical conformance of the proposed process and the means available with the contractor to do it.

Initials of Signatory to Bid:.....

PROPOSED ORGANIZATION FOR THE PROJECT

The Bidder shall provide in this Schedule Organization chart indicating the key personnel he will employ for Head office and for Site office involved in management, supervision and Project Manager/Engineering of the Works to be done under the Contract to direct and execute the Works, together with their names, qualifications, experience, positions held and their nationalities.

Experience, Designation	Name of Person	Summary of Qualifications, Present Position and Nationality

- Head Office:

- Site Office:

Contractor's Representative

Site Superintendent

Supervising engineers

Plant Erectors

Construction Supervisors

Other Key Staff

Initials of Signatory to Bid:.....

METHOD OF PERFORMING THE WORKS

The Bidder is required to submit a narrative outlining the method of performing the Works. The narrative should indicate in detail and include but not be limited to:

- The sequence and methods in which he proposes to carry out the Works, including the number of shifts per day and hours per shift, he expects to work.
- A list of all major items of constructional and erection plant, tools and vehicles proposed to be used in carrying out the Works at Site, including number of each kind, make, type, capacity of all equipment, working condition, which shall be deployed by him for Civil Work and Erection, Testing and Commissioning of the Works, in sufficient detail to demonstrate fully that the equipment will meet all the requirements of the Specifications.
- The procedure for installation/erection of equipment and transportation of equipment and materials to the site.
- Details regarding mobilization in Pakistan, the type of facilities including personnel accommodation, office accommodation, provision for maintenance and for storage, communications, security and other services to be used.
- The Contractor shall provide description of his construction camp's facilities and staff housing requirements.
- The Contractor shall be responsible for pumps, electrical power, water and electrical distribution systems, and sewerage system including all fittings, pipes and other items necessary for servicing the Contractor's construction camp and staff housing facilities. The Bidder shall list or explain his plans for providing these facilities for the service of the Contract as follows:
 1. Site Preparation (clearing, land preparation, etc.).
 2. Provision of Services.
 - a) Power (expected power load, etc.).
 - b) Water (required amount and system proposed).
 - c) Sanitation (sewage disposal system, etc.).

- 3. Construction of Facilities
 - a) Contractor’s Office, Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.).
 - b) Warehouses and Storage Areas (area required, type of construction and layout).
 - c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.)
- 4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).
- 5. Other Items Proposed (Security services, etc.).

Initials of Signatory to Bid:.....

PROPOSED PROGRAMME OF WORKS

Bidder shall provide a programme in a bar-chart/CPM/PERT form showing the sequence of work items by which he proposes to complete the Work of the entire Contract. The programme should indicate the sequences of work items and the period of time during which he proposes to complete the Works including the activities like designing, schedule of submittal of drawings, ordering/procurement of materials, manufacturing, delivering, design & construction of associated civil works, installation/erection, testing and commissioning of Works to be executed under the Contract.

Initials of Signatory to Bid:.....

WORK TO BE PERFORMED BY SUBCONTRACTORS

The Bidder will do the work with his own forces except the part (s) of the Works listed below which he intends to sub-contract.

**Items of Works
to be Sub-Contracted**

**Name and address of
Sub-Contractor**

**Statement of similar
works previously
Executed (attach evidence)**

Note:

1. No change of Sub-Contractor shall be made by the Bidder without prior approval of the Employer.
2. The truthfulness and accuracy of the statement as to the experience of Subcontractors is guaranteed by the Bidder. The Employer's judgment shall be final as to the evaluation of the experience of Subcontractors submitted by the Bidder.
3. Statement of similar works shall include description, location & value of work, year completed and name & address of the clients.
4. This may include manufacturer(s) who are proposed here and their relevant details to be provided accordingly including make, capacity and salient features to make it particularly suitable for the works. The technology used should also be detailed adequately.

Initials of Signatory to Bid:.....

**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, those must be listed in the space provided below:

Sr. No.	Clause No. / Section No.	Deviations/Clarifications
----------------	---------------------------------	----------------------------------

Note: Attach additional sheets, if necessary

Initials of Signatory to Bid:.....

SCHEDULE – F-2 TO BID

**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, those must be listed in the space provided below:

Sr. No.	Clause No. / Section No.	Deviations/Clarifications
---------	--------------------------	---------------------------

Note: Attach additional sheets, if necessary

Initials of Signatory to Bid:.....

SPECIFIC OPERATION/PLANT AND EQUIPMENT DETAIL

Note: Attach additional sheets, if necessary

Initials of Signatory to Bid:.....

SCHEDULE –H TO BID

JV AGREEMENT

[Employer to provide the standard form of Joint Venture Agreement]

(In the event that the successful Bidder is a joint venture formed of two or more companies, the Employer requires that the parties to the joint venture accept joint and several liabilities for all obligations under the Contract.)

SCHEDULE –I TO BID**PAST PERFORMANCE AND PRESENT COMMITMENTS****Past Performance**

Sr. No.	Name of project(s)	Name of employer	completed cost	Start date	Planned completion date	Actual completion date	Satisfactory performance certificate from employer / Remarks regarding delays if applicable
1.							
2.							
3.							
4.							
5.							
6.							
7.							

Present Commitments

Sr. No.	Name of ongoing project(s)	Name of employer	Total cost	Start date	Planned completion date	%age of works completed	Award letter / Remarks regarding delays if applicable
1.							
2.							
3.							
4.							
5.							
6.							
7.							

Any Bidder showing projects outside Pakistan, the information provided on the project needs to be substantiated by certification of concerned country's embassy in Pakistan.

**LETTER OF PRICE BID
AND
SCHEDULES TO BID**

LETTER OF PRICE BID AND SCHEDULES TO BID

Letter of Price Bid

Schedules to Bid

- Schedule J to Bid: Integrity Pact
- Schedule K to Bid: Site wise Project Payments
- Schedule L to Bid: Project Cost Summary

SCHEDULE OF PRICES

- Preamble to Schedule of Prices
- Schedule of Prices
- Summary of Bid Prices

LETTER OF PRICE BID

Bid Reference No.:

Package No.:

.....
.....
[Name of Works]

To:

.....
.....
.....

Gentlemen,

1. Having examined the Bidding Documents including Instructions to Bidders, Conditions of Contract, Specifications, Drawings, Schedules to Bid, Schedule of Prices and Addenda Nos. for the execution of the above-named Works, we, the undersigned, being a company doing business under the name of and address and being duly incorporated under the laws of hereby offer to execute and complete such Works and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price comprising of Local Currency Component of Pak Rupees (Rs.) or such other sum as may be ascertained in accordance with the said Documents.
2. We understand that all the Schedules attached hereto form part of this Bid.
4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the whole of the Works comprised in the Contract within the time(s) stated in Preamble to the Conditions of Contract.
5. We agree to abide by this Bid for the period of days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.
7. We undertake, if our Bid is accepted to execute the Performance Security referred to in Clause 10 of Conditions of Contract for the due performance of the Contract.
8. We understand that you are not bound to accept the lowest or any Bid you may receive.
9. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a Bid for the Works.
10. We confirm, if our Bid is accepted, that all partners of the joint venture shall be liable

jointly and severally for the execution of the Contract and the composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer. (Please delete in case of Bid from a single firm).

Dated this day of 200...

Signature in the capacity ofduly authorized to sign the Bid for
and on behalf of
(Name of Bidder in Block Capitals)

(Seal of Bidder)

Bidder's Address
.....
.....

Witness:

Signature:
Name:
Address:
.....
.....
Occupation

Integrity Pact

[To be filled and signed by the Bidder]

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

Contract No. _____

Dated _____

Contract Value: _____

Contract Title: _____

..... [Name of Supplier] 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 Supplier] 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 Supplier] 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 Supplier] 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 Supplier] 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 Supplier] 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 Buyer:

Name of Seller/Supplier:

Signature:

Signature:

[Seal]

[Seal]

SITE WISE PROJECT PAYMENTS

Bidder's should clearly furnished estimate of the value of work which would be executed by him site wise as mentioned below:-

Initials of Signatory to Bid:

Price Evaluation Sheet for Multan(50.15 KW PV On-Grid System)

System Power 50.15 KW

S. Nos	Description	Unit Price	Qty	UoM	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		85	Nos		
1.2	Inverter (Grid-Tied) 25 KW		2	Nos		
1.3	Cable for Interconnection (DC)		2	Job		
1.4	DC Breakers for string protections		2	Job		
1.5	Data Communication System		2	Job		
1.6	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		Nil	Not Required		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		2			
2.2.2	AC Breakers for MCCB Solar		2			
2.2.3	AC Breakers for MCCB Grid		2			
3.0	Fabricated Items					
3.1	Mounting Structure		2	Job		
3.2	Cable Tray/ PVC Pipes		2	Job		
3.3	DC Breaker Box		2	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 25 sqmm,4 core, Armored		50	Meters		
4.2	Installation Material		2	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		96	PCS		
5.2	Grounding Pits & Cables		4	Nos		
5.2.1	Grounding Cable (25mm2) for Lightning/Thundering Conduct		120	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area, Power distribution Room (Appropriate)		240	Meters		
5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		2	Nos		
5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		

7.0	Services					
7.1	Project Design & Execution		2	Job		
7.2	Erecting of Mechanical Mounting Structure		2	Job		
7.3	Installation, testing and Commissioning of Solar System		2	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		2	Job		
8.0	Transportation					
8.1	Charges		1	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 800 A		2	Nos		
9.2	Supplies and installation of Main DB Comprising of 800 AMP Main CB and 6x250 AMP Distrib CBs		1	Nos		
9.3	Supplies and installation of Main DB Comprising of 800 AMP Main CB and 3x250 AMP Distrib CBs		1	Nos		
9.4	Supplies and installation of Room Lightening 18W each		30	Nos		
9.5	Supplies and installation of Corridor Lightening 40Watt each		20	Nos		
9.6	Supplies and installation of Search Lightening 100Watt Each		6	Nos		
9.7	Supplies and installation of Efficient Three star labelled Ceiling Fans 65 Watt Each		40	Nos		
9.8	Supplies and installation of Coil 7/44 (R+B) at building misc. locations		2	Nos		
B	Total Project Cost of Retrofitting (PKR)					
D=A+B	Total Project Cost (PKR)					

Price Evaluation Sheet for DG Khan (50.15 KW PV On-Grid System)

System Power 50.15 KW

S. Nos	Description	Unit Price	Qty	UoM	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		85	Nos		
1.2	Inverter (Grid-Tied) 50 KW		1	Nos		
1.3	Cable for Interconnection (DC)		1	Job		
1.4	DC Breakers for string protections		1	Job		
1.5	Data Communication System		1	Job		
1.6	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		0	Nos		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		1			
2.2.2	AC Breakers for MCCB Solar		1			
2.2.3	AC Breakers for MCCB Grid		1			
3.0	Fabricated Items					
3.1	Mounting Structure		1	Job		
3.2	Cable Tray/ PVC Pipes		1	Job		
3.3	DC Breaker Box		1	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 35 sqmm,4 core, Armored		30	Meters		
4.2	Installation Material		1	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		85	PCS		
5.2	Grounding Pits & Cables		4	Nos		
5.2.1	Grounding Cable (25mm2) for Lightning/Thundering Conductor		120	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area,		240	Meters		

	Power distribution Room (Appropriate)					
5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		1	Nos		
5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		
7.0	Services					
7.1	Project Design & Execution		1	Job		
7.2	Erecting of Mechanical Mounting Structure		1	Job		
7.3	Installation, testing and Commissioning of Solar System		1	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		1	Job		
8.0	Transportation					
8.1	Charges		1	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 800 AMPx1		1	Nos		
9.2	Supplies and installation of Main DB Comprising of 800 AMP Main CB and 1x250 AMP 1x400 AMP Distributed CBs		1	Nos		
9.3	Supplies and installation of Sub DBs Comprising of 400 AMP Main CB and 6x50 AMP Distributed CBs		8	Nos		
9.4	Supplies and installation of Room Lightening 18W each		16	Nos		
9.5	Supplies and installation of Corridor Lightening 40Watt each		44	Nos		
9.6	Supplies and installation of Search Lightening 100Watt		15	Nos		
9.7	Supplies and installation of Efficient Three star labelled Ceiling Fans 65 Watt		82	Nos		
9.8	Supplies and installation of 1 Coil 7/44 (R+B), 35mmx30M (4 core), 50mmx20M (4 core), CB 16Ampx 25 CB 32 AmpX 10 at building misc locations		1	Job		
B	Total Project Cost of Retrofitting Solution (PKR)					
C=A+B	Total Project Cost (PKR)					

Price Evaluation Sheet for Bahawalpur(50.15 KW PV On-Grid System)

System Power 50.15 KW

S. Nos	Description	Unit Price	Qty	Uo M	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		85	Nos		
1.2	Inverter (Grid-Tied) 50 KW		1	Nos		
1.3	Cable for Interconnection (DC)		1	Job		
1.4	DC Breakers for string protections		1	Job		
1.5	Data Communication System		1	Job		
1.6	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		1	Nos		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		1	Nos		
2.2.2	AC Breakers for MCCB Solar		1	Nos		
2.2.3	AC Breakers for MCCB Grid		1	Nos		
3.0	Fabricated Items					
3.1	Mounting Structure		1	Job		
3.2	Cable Tray/ PVC Pipes		1	Job		
3.3	DC Breaker Box		1	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 3 5 sqmm,4 core, Armored		30	Meters		
4.2	Installation Material		1	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		85	PCS		
5.2	Grounding Pits & Cables		2	Nos		
5.2.1	Grounding Cable (25mm2) for Lightning/Thundering Conductor		70	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area, Power distribution Room (Appropriate)		140	Meters		
5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		1	Nos		

5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		
7.0	Services					
7.1	Project Design & Execution		1	Job		
7.2	Erecting of Mechanical Mounting Structure		1	Job		
7.3	Installation, testing and Commissioning of Solar System		1	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		1	Job		
8.0	Transportation					
8.1	Charges		1	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 500 AMPx1		1	Nos		
9.2	Main DB Comprising of 500 AMP Main CB and 2x 200 AMP Plus 8x32 AMP 16x16 AMP Distributed CBs Should be install		1	Nos		
9.3	Supplies and installation of Room Lightening 18W each		48	Nos		
9.4	Supplies and installation of Corridor Lightening 40Watt each		4	Nos		
9.5	Supplies and installation of Search Lightening 100Watt Each		7	Nos		
9.6	Supplies and installation of Efficient Three star labelled Ceiling Fans 65 Watt Each		50	Nos		
9.7	Supplies and installation of 1 Coil 7/44 (R+B) at building misc locations		1	Job		
B	Total Project Cost of Retrofitting Solution (PKR)					
D=A+B	Total Project Cost (PKR)					

Price Evaluation Sheet for Sahewal (50.15 KW PV On-Grid System)

System Power

50.15 KW

S. Nos	Description	Unit Price	Qty	UoM	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		85	Nos		
1.2	Inverter (Grid-Tied) 10 KW		1	Nos		
1.3	Inverter (Grid-Tied) 40 KW		1	Nos		
1.4	Cable for Interconnection (DC)		1	Job		
1.5	DC Breakers for string protections		2	Job		
1.6	Data Communication System		2	Job		
1.7	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		1	Nos		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		2	Nos		
2.2.2	AC Breakers for MCCB Solar		2	Nos		
2.2.3	AC Breakers for MCCB Grid		2	Nos		
3.0	Fabricated Items					
3.1	Mounting Structure		1	Job		
3.2	Cable Tray/ PVC Pipes		2	Job		
3.3	DC Breaker Box		2	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 16 sqmm,4 core, Armored		10	Meters		
4.1	AC Cables for Inverter Interconnection 35 sqmm,4 core, Armored		20	Meters		
4.2	Installation Material		2	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		85	PCS		
5.2	Grounding Pits & Cables		4	Nos		
5.2.1	Grounding Cable (25mm2) for Lightning/Thundering Conductor		80	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area, Power distribution Room (Appropriate)		160	Meters		
5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		2	Nos		
5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		

7.0	Services					
7.1	Project Design & Execution		1	Job		
7.2	Erecting of Mechanical Mounting Structure		1	Job		
7.3	Installation, testing and Commissioning of Solar System		1	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		1	Job		
8.0	Transportation					
8.1	Charges		1	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 800 AMPx1		1	Nos		
9.2	Supplies and installation of Main Power DBs at Metering Point 200 AMPx1		1	Nos		
9.3	Main DB Comprising of 200 AMP Main CB and 2x100 AMP, 8x32 AMP, 12x16AMP Distributed CBs		1	Nos		
9.4	Main DB Comprising of 800 AMP Main CB and 4x250 AMP, 10x16AMP Distributed CBs		1	Nos		
9.5	Supplies and installation of Search Lightening 40Watt Each		68	Nos		
9.6	Supplies and installation of Efficient Three star labelled Ceiling Fans 65 Watt Each		66			
9.7	Supplies and installation of 2Coil X 7/44 R and 2Coil X 7/44 B at building misc locations		2	Nos		
B	Total Project Cost of Retrofitting Solution (PKR)					
D=A+B+C	Total Project Cost (PKR)					

Price Evaluation Sheet for Lahore (100.33 KW PV On-Grid System)

System Power 100.30 KW

S. Nos	Description	Unit Price	Qty	UoM	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		170	Nos		
1.2	Inverter (Grid-Tied) 50 KW		2	Nos		
1.3	Cable for Interconnection (DC)		2	Job		
1.4	DC Breakers for string protections		2	Job		
1.5	Data Communication System		2	Job		
1.6	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		0	Nos		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		2	Nos		
2.2.2	AC Breakers for MCCB Solar		2	Nos		
2.2.3	AC Breakers for MCCB Grid		2	Nos		
3.0	Fabricated Items					
3.1	Mounting Structure		2	Job		
3.2	Cable Tray/ PVC Pipes		2	Job		
3.3	DC Breaker Box		2	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 35 sqmm,4 core, Armored		70	Meters		
4.2	Installation Material		2	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		170	PCS		
5.2	Grounding Pits & Cables		4	Nos		
5.2.1	Grounding Cable (25mm2) for Lightning/Thundering Conduct		120	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area, Power distribution Room (Appropriate)		240	Meters		
5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		2	Nos		

5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		
7.0	Services					
7.1	Project Design & Execution		2	Job		
7.2	Erecting of Mechanical Mounting Structure		2	Job		
7.3	Installation, testing and Commissioning of Solar System		2	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		2	Job		
8.0	Transportation					
8.1	Charges		2	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 800 AMPx2		2	Nos		
9.2	Supplies and installation of Room Lightening 18W each		30	Nos		
9.3	Supplies and installation of Corridor Lightening 40Watt each		120	Nos		
9.4	Supplies and installation of Search Lightening 100Watt Each		6	Nos		
9.5	Supplies and installation of Three star labelled Efficient Ceiling Fans 65 Watt Each		89	Nos		
9.6	Supplies and installation of Coil 7/44 (R+B) at building misc locations		2	Nos		
B	Total Project Cost of Retrofitting (PKR)					
D=A+B+C	Total Project Cost (PKR)					

Price Evaluation Sheet for Gujranwala (50.88 KW PV On-Grid System)

System Power 50.88 KW

S. Nos	Description	Unit Price	Qty	UoM	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		85	Nos		
1.2	Inverter (Grid-Tied) 25 KW		2	Nos		
1.3	Cable for Interconnection (DC)		2	Job		
1.4	DC Breakers for string protections		2	Job		
1.5	Data Communication System		2	Job		
1.6	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		0	Nos		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		2			
2.2.2	AC Breakers for MCCB Solar		2			
2.2.3	AC Breakers for MCCB Grid		2			
3.0	Fabricated Items					
3.1	Mounting Structure		2	Job		
3.2	Cable Tray/ PVC Pipes		2	Job		
3.3	DC Breaker Box		2	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 25 sqmm,4 core, Armored		20	Meters		
4.2	Installation Material		2	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		96	PCS		
5.2	Grounding Pits & Cables		4	Nos		
5.2.1	Grounding Cable (25mm2) for Lightning/Thundering Conduct		120	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area, Power distribution Room (Appropriate)		240	Meters		

5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		2	Nos		
5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		
7.0	Services					
7.1	Project Design & Execution		2	Job		
7.2	Erecting of Mechanical Mounting Structure		2	Job		
7.3	Installation, testing and Commissioning of Solar System		2	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		2	Job		
8.0	Transportation					
8.1	Charges		1	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 800 AMPx1		1	Nos		
9.3	Supplies and installation of Room Lightening 18W each		30	Nos		
9.4	Supplies and installation of Corridor Lightening 40Watt each		80	Nos		
9.5	Supplies and installation of Search Lightening 100Watt Each		8	Nos		
9.6	Supplies and installation of Efficient Three star labelled Ceiling Fans 65 Watt Each		129	Nos		
9.7	Supplies and installation of Coil 7/44 (R+B) at building misc locations		2	Nos		
B	Total Project Cost of Retrofitting (PKR)					
D=A+B+C	Total Project Cost (PKR)					

Price Evaluation Sheet for Faisalabad (60.18 KW PV On-Grid System)

System Power

60.18 KW

S. Nos	Description	Unit Price	Qty	UoM	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		102	Nos		
1.2	Inverter (Grid-Tied) 50 KW		1	Nos		
1.3	Cable for Interconnection (DC)		1	Job		
1.4	DC Breakers for string protections		1	Job		
1.5	Data Communication System		1	Job		
1.6	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		0	Nos		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		1			
2.2.2	AC Breakers for MCCB Solar		1			
2.2.3	AC Breakers for MCCB Grid		1			
3.0	Fabricated Items					
3.1	Mounting Structure		1	Job		
3.2	Cable Tray/ PVC Pipes		1	Job		
3.3	DC Breaker Box		1	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 35 sqmm,4 core, Armored		20	Meters		
4.2	Installation Material		1	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		102	PCS		
5.2	Grounding Pits & Cables		4	Nos		
5.2.1	Grounding Cable (25mm2) for Lightning/Thundering Conduct		120	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area, Power distribution Room (Appropriate)		240	Meters		

5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		2	Nos		
5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		
7.0	Services					
7.1	Project Design & Execution		2	Job		
7.2	Erecting of Mechanical Mounting Structure		2	Job		
7.3	Installation, testing and Commissioning of Solar System		2	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		2	Job		
8.0	Transportation					
8.1	Charges		2	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 800 AMPx1		1	Nos		
9.2	Supplies and installation of Room Lightening 18W each		30	Nos		
9.3	Supplies and installation of Corridor Lightening 40Watt each		10	Nos		
9.4	Supplies and installation of Search Lightening 100Watt Each		4	Nos		
9.5	Supplies and installation of Efficient Three star labelled Ceiling Fans 65 Watt Each		74	Nos		
9.6	Supplies and installation of Coil 7/44 (R+B) at building misc locations		2	Nos		
B	Total Project Cost of Retrofitting (PKR)					
C=A+B	Total Project Cost (PKR)					

Price Evaluation Sheet for Sargodha (40.12 KW PV On-Grid System)

System Power

40.12 KW

S. Nos	Description	Unit Price	Qty	UoM	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		68	Nos		
1.2	Inverter (Grid-Tied) 36 KW		1	Nos		
1.3	Cable for Interconnection (DC)		1	Job		
1.4	DC Breakers for string protections		1	Job		
1.5	Data Communication System		1	Job		
1.6	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		0	Nos		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		1			
2.2.2	AC Breakers for MCCB Solar		1			
2.2.3	AC Breakers for MCCB Grid		1			
3.0	Fabricated Items					
3.1	Mounting Structure		1	Job		
3.2	Cable Tray/ PVC Pipes		1	Job		
3.3	DC Breaker Box		1	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 25 sqmm,4 core, Armored		30	Meters		
4.2	Installation Material		1	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		68	PCS		
5.2	Grounding Pits & Cables		4	Nos		
5.2.1	Grounding Cable (25mm2) for Lightening/Thundering Conduct		120	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area, Power distribution Room (Appropriate)		240	Meters		
5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		2	Nos		

5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		
7.0	Services					
7.1	Project Design & Execution		2	Job		
7.2	Erecting of Mechanical Mounting Structure		2	Job		
7.3	Installation, testing and Commissioning of Solar System		2	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		2	Job		
8.0	Transportation					
8.1	Charges		1	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 400 AMP		1	Nos		
9.2	Supplies and installation of Room Lightening 18W each		30	Nos		
9.3	Supplies and installation of Corridor Lightening 40Watt each		10	Nos		
9.4	Supplies and installation of Search Lightening 100Watt Each		6	Nos		
9.5	Supplies and installation of Efficient Three star labelled Ceiling Fans 65 Watt Each		67	Nos		
9.6	Supplies and installation of Coil 7/44 (R+B) at building misc locations		2	Nos		
B	Total Project Cost of Retrofitting (PKR)					
C=A+B	Total Project Cost (PKR)					

Price Evaluation Sheet for Rawalpindi (50.15 KW PV On-Grid System)

System Power 50.15 KW

S. Nos	Description	Unit Price	Qty	UoM	Total Price	Sub Total
1.0	PV Modules & System					
1.1	Solar Module (590 Wp)		85	Nos		
1.2	Inverter (Grid-Tied) 25 KW		2	Nos		
1.3	Cable for Interconnection (DC)		2	Job		
1.4	DC Breakers for string protections		2	Job		
1.5	Data Communication System		2	Job		
1.6	PV-DG Synchronization System		1	Job		
2.0	AC Termination & Accessories					
2.1	Electricity Connection Energization					
2.1.1	Transformer 100 KVA (Approved by relevant DISCO)		0	Nos		
2.1.2	Demand Notice Plus other Accessories					
2.2	LT Termination					
2.2.1	Low Voltage Switchgear Cabinet		2			
2.2.2	AC Breakers for MCCB Solar		2			
2.2.3	AC Breakers for MCCB Grid		2			
3.0	Fabricated Items					
3.1	Mounting Structure		2	Job		
3.2	Cable Tray/ PVC Pipes		2	Job		
3.3	DC Breaker Box		2	Job		
4.0	Cable & Accessories					
4.1	AC Cables for Inverter Interconnection 35 sqmm,4 core, Armored		30	Meters		
4.2	Installation Material		2	Lot		
5.0	Earthing/ Grounding System					
5.1	Component Grounding Cable		96	PCS		
5.2	Grounding Pits & Cables		4	Nos		
5.2.1	Grounding Cable (25mm2) for Lightning/Thundering Conduct		120	Meters		
5.2.2	Grounding Flat Iron Grounding Network for the plant Area, Power distribution Room (Appropriate)		240	Meters		

5.2.3	Lightening Poles with Conductor GND Network & GND Electrode		2	Nos		
5.2.4	OT Copper Nose for 16, 35 mm2 Cables		1	Lot		
7.0	Services					
7.1	Project Design & Execution		2	Job		
7.2	Erecting of Mechanical Mounting Structure		2	Job		
7.3	Installation, testing and Commissioning of Solar System		2	Job		
7.4	Net Metering complete in all aspects till installation of bidirectional meter		2	Job		
8.0	Transportation					
8.1	Charges		2	Job		
A	Total Project Cost Solar Based Power Solution (PKR)					
	Cost Per Watt (PKR)					
9.0	Supplies and installation of Retrofitting					
9.1	Supplies and installation of Main Power DBs at Metering Point 800 AMPx2		2	Nos		
9.4	Supplies and installation of Room Lightening 18W each		40	Nos		
9.5	Supplies and installation of Corridor Lightening 40Watt each		10	Nos		
9.6	Supplies and installation of Search Lightening 100Watt Each		4	Nos		
9.7	Supplies and installation of Three star labelled Efficient Ceiling Fans 65 Watt Each		32	Nos		
9.8	Supplies and installation of Coil 7/44 (R+B) at building misc locations		2	Nos		
B	Total Project Cost of Retrofitting (PKR)					
C=A+B	Total Project Cost (PKR)					

SCHEDULE –L TO BID

LUMP SUM COST BREAKUP FOR MAJOR COST ITEMS

The Bidder is to provide a detailed breakup of his Lump sum costs in a manner that the overall picture for the quoted price can be understood. It should include major heading wise cost breakup including rate analyses for at least 7 major cost items as required to analyze it.

Price Evaluation Sheet for Summary
(503.69 KW PV On-Grid System)

S. Nos	Description	System Price	Sub Total
1.0	Commissioner Office, Multan		
1.1	Solar Electrification System (50.15 KW)		
1.2	Supplies and installation of Retrofitting		
2.0	Commissioner Office, DG Khan		
2.1	Solar Electrification System (50.15 KW)		
2.2	Supplies and installation of Retrofitting		
3.0	Commissioner Office, Bahawalpur		
3.1	Solar Electrification System (50.15 KW)		
3.2	Supplies and installation of Retrofitting		
4.0	Commissioner Office, Sahawal		
4.1	Solar Electrification System (50.15 KW)		
4.2	Supplies and installation of Retrofitting		
5.0	Commissioner Office, Lahore.		
5.1	Solar Electrification System (100.3 KW)		
5.2	Supplies and installation of Retrofitting		
6.0	Commissioner Office, Gujranwala.		
6.1`	Solar Electrification System (50.15 KW)		
6.2	Supplies and installation of Retrofitting		
7.0	Commissioner Office, Faisalabad.		
7.1	Solar Electrification System (60.18 KW)		
7.2	Supplies and installation of Retrofitting		
8.0	Commissioner Office, Sargodha.		
8.1	Solar Electrification System (40.12 KW)		
8.2	Supplies and installation of Retrofitting		
9.0	Commissioner Office, Rawalpindi.		
9.1	Solar Electrification System (50.15 KW)		
9.2	Supplies and installation of Retrofitting		

10.0	Miscellaneous Expenses		
10.1	Pre-shipment & Post-shipment Inspection		
10.2	Establishment of furnished temporary site office at Multan (1 Laptop-core-i7, 11 Gen, 16 GB RAM, 2 TB HDD, 512 GB SSD, Chair Plus Table) Comprise of Porta Cabin (20x10) feet and handover the laptop to Employer after successful completion of the Project.		
10.3	Provisioning of one 1300 cc Car (Not older than 2019) for Employer on Rental Basis for the Period of Two Years		
10.4	O&M Services for the period of two (02) Years		
A	Total Project Cost (PKR)		

SCHEDULE OF PRICES

SCHEDULE OF PRICES

Description

1. Preamble to Schedule of Prices

Summary of Bid Prices

- | | | |
|----------------|---|--|
| Schedule No.1 | - | PV Modules & System (BOQ measurement basis) |
| Schedule No.2 | - | AC Termination & Accessories (BOQ measurement basis) |
| Schedule No. 3 | - | Supply of Plant (Pre Engineered Structures)

including Fixtures Cables, Earthing/ Grounding System, and other materials & goods and spare parts (if any) (Schedule of Price basis) |
| Schedule No. 4 | - | Supplies and installation of Retrofitting (Schedule of Price basis) |
| Schedule No. 5 | - | Installation, O&M and other Services (Schedule of Price basis) |
| Schedule No. 6 | - | Grand Summary of Bid Price |

1. PREAMBLE TO SCHEDULE OF PRICES

1. General

- 1.1 The Schedule of Prices shall be read in conjunction with the Conditions of Contract together with the Specifications and Bid Drawings.
- 1.2 The Bidder shall quote for all items of the Works executed on EPC/Turnkey basis and the prices shall be quoted for the complete scope of Work as described or implied from these Bidding Documents in schedule-L to bid.

2. Description & Quantities

- 2.1 Price given in the Schedule of Prices against each item shall be for the scope covered by that item as detailed in the Specifications, Bid Drawings or elsewhere in the Bidding Documents. The general directions and descriptions of work and materials are not necessarily repeated nor summarized in the Schedule of Prices and do not generally give a full description of the Plant and equipment to be supplied and the services to be performed under each item. References to the relevant sections of the Bidding Documents shall be made to ascertain the full scope of the requirements included in each item prior to filling in the rates and prices against each item in Schedule of Prices.

The Schedule of Prices only identifies major components of the structure and it does not restrict the responsibility of the Contractor to furnish all equipments, materials and services as deemed necessary by the Employer/Project Manager/Engineer for making the structure operationally complete and satisfactory as specified and/or implied in the Bidding Documents and subsequent revisions thereto.

- 2.2 The quantities as shown in the Schedule of Prices are estimated quantities and provisional only being given as an indication of the Scope of Work to enable the Bidder to bid for different items of the Works in accordance with his estimate of costs. The estimated quantities shall be used for comparing the Bids. It is, however, be noted that the basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Project Manager/Engineer.
- 2.3 The sizes & dimensions mentioned and/or specified in the various technical descriptions and specifications including Bid Drawings are tentative and not final as the responsibility for detailed design rests with the Contractor under the Contract. If, in the opinion of the Project Manager/Engineer, at the time of review of Contractor's drawings/designs for approval, certain sizes & dimensions of some items have to be increased for proper completion and/or operation of the Works, then revised sizes & dimensions shall be supplied by the Contractor at no extra cost to the Employer.

3. Units & Abbreviations

- 3.1 Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply both with FPS & MKS System.

The following abbreviations shall be used in the Schedule of Prices:

	<u>Abbreviation</u>
Local Currency Component	LCC
Pakistani Rupees	PKR/Pak Rs.
Ex Works	EXW
Quantity	Qty
Square Feet	Sft.
Running Feet	Rft.

4. Rates and Prices

- 4.1 Except as otherwise expressly provided under the Conditions of Contract, the unit rates and lump sum amounts entered in the Schedule of Prices will be the rates at which the Contractor will be paid, and shall be deemed to include for the full scope and all costs incurred by the Contractor in the performance of the Works, the provision of services including his overheads, income tax, super tax, other indirect costs, customs & other duties, profits and costs of accepting the general risks, liabilities and obligations set forth or implied in the Contract, except for such costs which are specified as reimbursable under the Contract.

The unit rates shall be extended to show the total amount for each item. The total of the Schedule of Prices is the Total Bid Price and shall be entered in Paragraph 1 of the Form of Price Bid. Where a discrepancy exists between the unit rate and the extended total amount, the unit rate shall be taken as correct and the total amount adjusted accordingly.

- 4.2 Unless otherwise stipulated in the Conditions of Contract, the rates and prices entered by the Bidder shall be fixed and firm and shall not be subject to adjustment during the performance of the Contract.
- 4.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date twenty eight (28) days prior to the deadline for submission of Bids shall be included in the rates and prices and the total Bid Price submitted by a Bidder.

Additional/reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed/deducted as per provisions of the Conditions of Contract.

- 4.4 The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Schedule of Prices, and where no items are provided in the Schedule of Prices for any work required to be executed by the Contractor on EPC/Turnkey basis under single responsibility for the completion of the Works and to make the structure operationally complete, the cost of such item(s) shall be deemed to be distributed among the rates and prices entered for the related items of the Works and no separate payment will be made by the Employer for those items executed by the Contractor.

The rates, prices and amounts shall be entered against each item in the Schedule of Prices. Where a Bidder fails to quote a price of any item of the Schedule of Prices, the Employer will consider that the price of that item is included among other items and the Contractor will be obligated to furnish that item at no extra cost to the Employer, if awarded the Contract.

- 4.5 The Bidder shall be deemed to have obtained all information as to port clearance facilities and charges, loading and unloading facilities and charges, storage facilities and charges, transportation facilities and charges, congestion and/or other conditions to be expected at Karachi Port and or any other seaport of Pakistan and all requirements related thereto.

The Contractor shall be responsible to make complete arrangements for the transportation of the Plant to the Site. The Bidder shall be deemed to have included all clearing, forwarding and other incidental costs in this regard in his Bid. The Contractor will have the option to use either Karachi Port or any other seaport of Pakistan.

- 4.6 The Contractor shall provide all parts of the Works to be completed in every respect for commercial operation. Notwithstanding that any details, accessories, etc. required for the complete installation and satisfactory operation of the Plant, are not specifically mentioned in the Schedule of Prices, Specifications including Bid Drawings, such details shall be considered as included in the Contract Price. All charges for the supply of goods, materials, accessories or work not specifically mentioned herein but necessary for the completion and operation of the Works shall be deemed to have been included in the quoted prices.

- 4.7 All costs in connection with inspection and witnessing of Factory Acceptance Tests within and out side Pakistan as per provisions of Sub-Clause 20.6 of Particular Conditions of Contract shall be borne by the Contractor and shall be deemed to have been included in the quoted prices.

All costs in connection with the holding of meetings shall be borne by the Contractor.

The rates in the Schedule of Prices shall also include Contractor's cost for providing Performance Security and other Bank Guarantees required for performance of the Contract.

5. Bid Prices

5.1 Break-up of Bid Prices

The various elements of Bid Prices shall be quoted as detailed below:

a) Shipping & Insurance

i) Shipping

The Bidder shall quote prices for shipping from port of shipment to the port of entry in Pakistan (Pakistan seaport) for the sub-totals of the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials to be imported in Pakistan for the Contract. Such prices shall include all marine transportation costs including ocean freight, heavy lift

charges, fees and other charges, etc.

The prices for shipping/marine transportation shall be quoted for shipment through any reputed shipping lines acceptable to the Employer including Pakistan National Shipping Corporation (PNSC).

Cost of shipment(s) affected by the Contractor at his option by aircraft shall be deemed to be included in the Total Bid Price.

ii) Insurance

The Bidder shall quote prices for insurance cover from ex-factory/ex-works to the Site (warehouse to warehouse) for the sub-totals of the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials to be imported in Pakistan for the Contract. Such prices shall include all insurance costs covering the responsibility for all loss or damages while loading, unloading, storing and trimming on board the vessel at the port of shipment or on inland carrier and transportation to Site.

The prices for transportation/marine insurance cover shall be quoted on the basis of insurance through insurers from any country(ies) of the world acceptable to the Employer.

b) Unit Price for Supply of Goods

The Bidder shall quote prices for Local Goods, materials (other than materials required for civil works such as concrete and reinforcement etc. cost of which will be included in the price of civil works) and equipment in the relevant column of Ex-Factory of "Schedule of Prices". Such prices shall include:

- i) Design documentation, drawings, drafting, planning services, manufacturing, testing and packing of finished goods ready for delivery to Site including loading, unloading, transportation, storing and insurance costs,
- ii) All custom duties, sales tax and other taxes already paid or payable on the components and raw materials used in the manufacture or assembly of Local Goods, materials and equipments.

c) Local Transport

Inland transportation for the Plant, Erection Equipment, Spare Parts and Workshop Equipment shall be the Contractor's responsibility in respect of:

- i) the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials offered from outside Pakistan; from the port of entry in Pakistan to the storage area at the Site, and

- ii) indigenous Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials if any, offered from within Pakistan; from the factory in Pakistan to the storage area at the Site. The cost shall also include all insurance costs of Local Goods and other materials from factory to Site covering the responsibility of all losses or damages, while loading, unloading, storing, trimming on the carrier and transporting to Site. The cost of insurance of Local Goods shall be quoted on the basis of insurance through any insurance company listed in Clause 5.1 a) ii) here above, acceptable to the Employer.

All charges occurring therefrom including all taxes i.e. Income tax, GST or any other tax, fees etc. and charges for loading, forwarding and unloading expenses shall be borne by the Contractor. Unloading at the Site, handling of the Plant, Erection Equipment, Spare Parts, Workshop Equipment and other materials to the designated point of Site storage, checking and verifying all shipments received against shipping documents, issue of all receiving reports and issues of damage reports (when applicable) shall be the Contractor's responsibility.

The Bidder shall recognize such elements of the costs which he expects to incur in the performance of the Works and shall include all such costs in the rates and amounts entered in the Schedule of Prices.

d) Erection & Other Work

The Bidder shall quote prices for Erection & Other Work for the sub-totals of the Plant at the Site. Such prices shall include the costs of handling of the Plant and other materials from Site storage to point of final installation, erection, installation, testing, commissioning including all inspection, performance tests, reliability tests and responsibility for operation & maintenance of the Plant until issuance of the Taking-Over Certificate, the cost of foreign and local erection staff and labour, tools and equipment etc. It shall also cover the services of qualified representative(s) of the supplier(s) of Plant or adviser(s) to assure proper erection and commissioning of the Plant.

The price shall also include cost of arranging insurances in respect of Contractor's operations in Pakistan which insurances shall be effected by the Contractor with any insurance company listed in Clause 5.1 a) ii) here above, acceptable to the Employer.

e) Civil Works

The Bidder shall quote prices including Civil Works. Such prices shall include all costs of materials used for civil building and other construction works, construction for civil works, supervision including all costs of construction staff and labour, Contractor's Equipment, tools and equipment, etc.

f) Other Services

In the Schedule of Prices, under the relevant items, the Bidders shall quote prices for all costs to be incurred in connection with inspections and witnessing of tests at manufacturers' works within or outside Pakistan by the Employer/Project Manager/Engineer's staff.

5.2 Total Bid Price

The total of Bid prices in the Schedule of Prices shall be entered in the Summary of Bid Prices.

6. Erection & Testing Equipment and Maintenance Tools

- 6.1 The Bidder shall be responsible to provide all Erection and Testing Equipment & Maintenance Tools at the Site, at his own expenses.

7. Provisional Sums

- 7.1 Provisional Sums included and so designated in the Schedule of Prices if any, shall be expended in whole or in part at the direction and discretion of the Employer/Project Manager/Engineer. The Contractor will only receive payment in respect of Provisional Sums if he has been instructed by the Employer/Project Manager/Engineer to utilize such sums.

Provisional Sums shall be expended for reimbursement of Contractor's invoices for any additional site protection works, relocation of services or any other work / payments as instructed by the Employer/Project Manager/Engineer through Variation Order .

PREAMBLE TO CONDITIONS OF CONTRACT

PREAMBLE TO CONDITIONS OF CONTRACT

Commencement Date	Sub-Clause 1.1.1.(i) The date for commencement of the Works is the date of issuance of the Project Manager/Engineer's Written Order to Commence which shall be issued within 14 days of signing of Contract Agreement and also site possession has been delivered.
Defect Liability Period	Sub-Clause 1.1.11 The Defect Liability Period is 365 days after the date certified in the Taking-Over Certificate but subject to extension as provided under Sub-Clause 30.4. The defects at site considering structural stability, physical appearance and precautionary measures shall be identified by the Employer's Representative.
The Employer	Sub-Clause 1.1.12. The Employer is Director Projects, Directorate of Power Projects, Energy Department, Lahore
The Project Manager / Engineer	Sub-Clause 1.1.15. Director Projects, Directorate of Power Projects or any competent person / firm/authority appointed by the Employer and notified to the Contractor
Time for Completion	Sub-Clause 1.1.35. The Time for Completion for whole of the Works is 16 months reckoned from the Commencement Date for the project. Commissioner Complexes Multan, Bahawalpur, DG Khan and Sahiwal will be solarized in first 8 months and Commissioner Complexes Lahore, Gujranwala, Rawalpindi, Faisalabad and Sargodha will be solarized in the next 8 months. Separate date if different part/section of the projects are desired to be completed at different periods.
Warranty Period	Sub-Clause 1.1.40. The Warranty Period is two years for complete installation.
Project Manager/Engineer's Duties & Authorities	Sub-Clause 2.1 The duties & authorities of the Project Manager/Engineer are specified in Particular Conditions of Contract.
Confirmation in Writing	Sub-Clause 2.6 (i) The Contractor shall notify to the Project Manager/Engineer within ten (10) days, if he requires any confirmation. (ii) Project Manager/Engineer shall confirm the decision/instruction within ten (10) days of the requirement.
Ruling Language	Sub-Clause 5.1. The version in English language (ruling language) shall prevail.

Day to Day Communications	Sub-Clause 5.2. The language for day to day communication is English.
As Built-Drawings	Sub-Clause 6.10 As-Built drawings shall be provided to the Project Manager/Engineer within thirty (30) days from the date of issue of Taking-Over Certificate.
Programme to be Furnished	Sub-Clause 12.1. The Programme must be submitted in the form of Bar-Chart with critical path/activities for individual activities and overall Project.
Employer's Equipment	Sub-Clause 14.4. There will be no Employer's Equipment available for use by the Contractor.
Working Hours	Sub-Clause 18.3. The normal working hours on the Site are to conform to the applicable labour laws and the existing customs of Pakistan.
Time for Completion	Sub-Clause 25.1 Period of Completion is as stated under Sub-Clause 1.1.35 hereof.
Earlier Completion	Sub-Clause 26.3 Not Applicable Sub-Clause 27.1.
Delay in Completion	Failure of the Contractor to meet the Time for Completion entitles the Employer to deduct from the Contract Price, the liquidated damages @ 0.1 % percent of the Contract Price as stated in Letter of Acceptance, excluding Provisional Sums for each and every day, including holidays, of delay or part thereof; but to a maximum limit of 10 % of the Contract Price as stated in Letter of Acceptance, excluding Provisional Sums.
Prolonged Delay	Sub-Clause 27.2. Maximum amount recoverable from the Contractor by the Employer shall be 10% of Contract Price as stated in the Letter of Acceptance, excluding Provisional Sum.
Terms of Payment	Sub-Clause 33.1. In addition to the provisions under Clause 33, the terms of payment shall be as stated in Sub-Clause 33.1 of Particular Conditions of Contract.
Payment in Foreign Currencies	Sub-Clause 35.1. Payment will only be made in local currency.
Insurance of Works	Sub-Clause 43.1. The amount of insurance shall be for full replacement value of the Works. For the deductibles, if any, the Contractor shall submit an undertaking that he shall indemnify and keep indemnified the Employer for the amount of deductibles provided in the insurance policy.

Sub-Clause 43.1.(a)

The additional risks to be insured are as stated in Sub-Clause 43.1(a) of the Particular Conditions of Contract.

Third Party Liability Sub-Clause 43.3.
The amount of insurance against third party liability taken out by the Contractor up till the acceptance of the systems, from the companies approved by the Government of Pakistan.

Payment on Termination for Employer's Default Sub-Clause 46.3.
The additional amount payable by the Employer on termination shall not exceed the actual cost of work executed.

Notices to Project Manager/Engineer Sub-Clause 49.2.
The address of the Employer for notices is the same as given in Sub-Clause 1.1.12 here above.

The address of the Project Manager/Engineer for notices is the same as given in Sub-Clause 1.1.15 here above.

Applicable Law Sub-Clause 51.1.
The Contract in all respects be read and construed and shall operate as a Pakistani Contract in conformity with the Laws of Islamic Republic of Pakistan.

Procedural Law for Arbitration Sub-Clause 51.2.
The procedural law for arbitration shall be the Rules of Pakistan Arbitration Act 1940 as amended.

Language and Place of Arbitration Sub-Clause 51.3.
The language of arbitration is English.
The place of arbitration is Lahore, Islamic Republic of Pakistan.

GENERAL CONDITIONS OF CONTRACT

PART-I: GENERAL CONDITIONS OF CONTRACT

Definitions and Interpretations

1.1 Definitions

In the Contract (as hereinafter defined) the following words and expressions shall have the meanings hereby assigned to them:

1.1.1 "Commencement Date" means whichever the latest is of:

- i) the date specified in the Preamble as the date for commencement of the Works or the date when the Contractor receives,
- ii) such payment in advance of the commencement of the Works as may be specified in the terms of payment, or
- iii) notice of the issue of any import license necessary for commencing performance of the Contract, or
- iv) notice that any legal requirements necessary for the Contract to enter into force have been fulfilled, or
- v) notice that any necessary financial or administrative requirements specified in Part II as conditions precedent to commencement have been fulfilled.

1.1.2 "Conditions" means the Preamble to and these Conditions of Contract, Parts I and II.

1.1.3 "Contract" means the agreement between the Employer and the Contractor for the execution of the Works incorporating the Conditions, Specification, Employer's Drawings and Contractor's Drawings, priced and completed Schedules, Tender, Letter of Acceptance and such further documents as may be expressly incorporated by the Letter of Acceptance.

1.1.4 "Contract Agreement" means the documents recording the terms of the Contract between the Employer and the Contractor.

1.1.5 "Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution of the Works.

1.1.6 "Contractor" means the person whose tender has been accepted by the Employer and the legal successors in title to the Contractor but not (except with the consent of the Employer) any assignee of the Contractor.

1.1.7 "Contractor's Drawings" means all drawings, samples, patterns, models and operation and maintenance manuals to be submitted by the Contractor in accordance with Clause 6.

1.1.8 "Contractor's Equipment" means all appliances or things of whatsoever nature required for the purposes of the Works but does not include Plant.

- 1.1.9** "Contractor's Risks" means the risks defined in Sub-Clause 37.3.
- 1.1.10** "Defects Liability Certificate" means the certificate to be issued by the Engineer to the Contractor in accordance with Sub-Clause 30.11.
- 1.1.11** "Defects Liability Period" means one year or the period stated in Part II following taking over, during which the Contractor is responsible for making good defects and damage in accordance with Clause 30.
- 1.1.12** "Employer" means the person named as such in the Preamble and the legal successors in title to the Employer but not (except with the consent of the Contractor) any assignee of the Employer.
- 1.1.13** "Employer's Drawings" means all the drawings and information provided by the Employer or the Engineer to the Contractor under the Contract.
- 1.1.14** "Employer's Risks" means those risks defined in Sub-Clause 37.2.
- 1.1.15** "Engineer" means the person / firm appointed by the Employer to act as Consultant for the purposes of the Contract and designated as such in the Preamble.
- 1.1.16** "Engineer's Representative" means any representative of the Engineer appointed from time to time by the Engineer under Sub-Clause 2.2.
- 1.1.17** "Final Certificate of Payment", means the certificate to be issued by the Engineer to the Employer in accordance with Sub-Clause 33.10.
- 1.1.18** "Force Majeure" has the meaning assigned to it under Sub-Clause 44.1.
- 1.1.19** "Foreign Currency" means a currency of a country other than that in which Plant is to be installed.
- 1.1.20** "Gross Misconduct" means any act or omission of the Contractor in violation of the most elementary rules of diligence which a conscientious contractor in the same position and under the same circumstances would have followed.
- 1.1.21** "Letter of Acceptance" means the formal acceptance by the Employer of the Tender incorporating any adjustments or variations to the Tender agreed between the Employer and the Contractor.
- 1.1.22** "Performance Security" means the security to be provided by the Contractor in accordance with Sub-clause 10.1. for the due performance of the Contract.
- 1.1.23** "Plant" means machinery, apparatus, materials and all things to be provided under the Contract for incorporation in the Works.
- 1.1.24** "Programme" means the Programme to be submitted by the Contractor in accordance with Sub-Clause 12.1 and any approved revision thereto.
- 1.1.25** "Provisional Sum" means a sum, described as such for the execution of work or for the supply of goods or services, to be used in accordance with Sub-Clause 36.1.

- 1.1.26** "Risks Transfer Date" means the date when the risk of loss of or damage to the Works passes from the Contractor to the Employer in accordance with Sub-Clause 39.1.
- 1.1.27** "Schedule of Prices" means the completed and priced Schedule of Prices, or any part or individual schedule thereof, submitted by the Contractor with his Tender and forming a part of the Contract documents.
- 1.1.28** "Section" means a part of the Works specifically identified as such as in the Contract.
- 1.1.29** "Site" means the place or places, provided or made available by the Employer where work is to be done by the Contractor or to which Plant is to be delivered, together with so much of the area surrounding the same as the Contractor shall with the consent of the Employer use in connection with the Works otherwise than merely for the purposes of access.
- 1.1.30** "Specification" means the specification of the Works included in the Contract and any modification thereof made in accordance with Clause 31.
- 1.1.31** "Subcontractor" means any person (other than the Contractor) named in the Contract for any part of the Works, or any person to whom any part of the Contract has been subcontracted with the consent of the Engineer, and the Subcontractor's legal successors in title but not any assignee of the Subcontractor.
- 1.1.32** "Taking-Over Certificate" means the certificate to be given by the Engineer to the Contractor in accordance with Clause 29.
- 1.1.33** "Tender" means the Contractor's priced offer to the Employer for the Execution of the Works.
- 1.1.34** "Tests on Completion" means the tests specified in the Contract or otherwise agreed by the Engineer and the Contractor to be performed before the Works are taken over by the Employer.
- 1.1.35** "Time for Completion" means the time stated in the Preamble for completing the Works or any Section thereof and passing the Tests on Completion calculated from the Commencement Date unless extended in accordance with Clause 26.
- 1.1.36** "Variation Order" means any written order, identified as such, issued to the Contractor by the Engineer under Sub-Clause 31.1.
- 1.1.37** "Works" means all Plant to be provided and work to be done by the Contractor under the Contract.

1.2 Headings and Titles

The headings and titles in these Conditions shall not be deemed part thereof or be taken into consideration in the interpretation or construction of the Contract.

1.3 Interpretation

Words importing persons or parties shall include firms and corporations and any organisation having legal capacity.

Words importing the singular only also include the plural and vice versa where the context requires.

1.4 Written Communications

Wherever in the contract provision is made for a communication to be "written" or "in writing" this means any hand-written, type-written or printed communication, including telex, cable and facsimile transmission.

1.5 Notices, Consents and Approvals

Wherever in the Contract provision is made for the giving of notice, consent or approval by any person, such consent or approval shall not be unreasonably withheld. Unless otherwise specified, such notice, consent or approval shall be in writing and the word "notify" shall be construed accordingly.

1.6 Costs, Overhead Charges and Profit

Whenever by these Conditions the Contractor is entitled to be paid cost, such cost shall be properly incurred and shall include any overhead charges properly allocable thereto but not profit unless so stated. Any profit entitlement shall be added to cost at the percentage stated in the Preamble.

1.7 Periods

In these Conditions "days" means calendar day and "year" means 365 days.

Engineer and Engineer's Representative

2.1 Engineer's Duties

The Engineer shall carry out the duties specified in the Contract.

If the Engineer is required, under the terms of his appointment by the Employer, to obtain the specific approval of the Employer before carrying out any of these duties, full particulars of such requirements shall be set out in Part II.

Except as expressly stated in the Contract the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract.

2.2 Engineer's Representative

The Engineer's Representative shall be appointed by and be responsible to the Engineer and shall only carry out such duties and exercise such authority as may be delegated to him by the Engineer under Sub-Clause 2.3.

2.3 Engineer's Power to Delegate

The Engineer may from time to time delegate to the Engineer's Representative any of the duties vested in the Engineer and may at any time revoke such delegation.

Any such delegation or revocation shall be in writing and shall not take effect until a copy thereof has been delivered to the Contractor and the Employer.

Any decision, instruction or approval given by the Engineer's Representative to the Contractor in accordance with such delegation shall have the same effect as though it had been given by the Engineer. However:

- (a) any failure of the Engineer's Representative to disapprove any Plant or workmanship shall not prejudice the right of the Engineer to disapprove such Plant or workmanship and to give instructions for the rectification thereof.
- (b) if the Contractor questions any decision or instruction of the Engineer's Representative he may refer the matter to the Engineer who shall confirm, reverse or vary such decision or instruction.

2.4 Engineer to Act Impartially

Wherever under the Contract the Engineer is required to exercise his discretion by:

- (a) giving his decision, opinion or consent, or
- (b) expressing his satisfaction or approval, or
- (c) determining value, or
- (d) otherwise taking action which may affect the rights and obligations of the Employer or the Contractor,

he shall exercise such discretion impartially within the terms of the Contract and having regard to all the circumstances.

2.5 Engineer's Decisions and Instructions

The Contractor shall proceed with the decisions and instructions given by the Engineer in accordance with these Conditions.

2.6 Confirmation in Writing

The Contractor may require the Engineer to confirm in writing any decision or instruction of the Engineer which is not in writing. The Contractor shall notify the Engineer of such requirement without undue delay. Such a decision or instruction shall not be effective until written confirmation thereof has been received by the Contractor.

2.7 Disputing Engineer's Decisions and Instructions

If the Contractor disputes or questions any decision or instruction under Sub-Clause 2.5 or a written confirmation under Sub-Clause 2.6, he shall give notice to the Engineer within twenty eight (28) days after receipt thereof, giving his reasons.

The Engineer shall within a further period of twenty eight (28) days by notice to the Contractor and the Employer with reasons, confirm, reverse or vary such decision or instruction.

If either party disagrees with the action taken by the Engineer, or if the Engineer fails to reply to the Contractor's notice within the stipulated twenty eight (28) days, and the matter cannot be settled amicably that party shall be at liberty, subject to Sub-Clause 50.1, to refer the matter to arbitration in accordance with the Contract.

2.8 Replacement of Engineer

The Employer shall not appoint any person to act in replacement of the Engineer without the consent of the Contractor.

Assignment and Subcontracting

3.1 Assignment

The Contractor shall not assign the Contract or any part of his obligations under the Contract. A charge in favour of the Contractor's bankers of any monies due under the Contract shall not be considered an assignment.

4.1 Subcontracting

The Contractor shall not subcontract the whole of the Works.

Except where otherwise provided by the Contract, the Contractor shall not subcontract any part of the Works without the prior consent of the Engineer.

The Contractor shall however, not require such consent for purchases of materials or to place contracts for minor details or for any part of the Works of which the manufacturer or supplier is named in the Contract.

The Contractor shall be responsible for the acts, defaults and neglects of any Subcontractor, his agents or employees as fully as if they were the acts, defaults or neglects of the Contractor, his agents or employees.

Contract Documents

5.1 Ruling Language

Where versions of the Contract are prepared in different languages, the version which is to prevail shall be specified in the Preamble. The language of such version is referred to as the ruling language.

5.2 Day to Day Communications

The language for day to day communications is stated in the Preamble.

5.3 Priority of Contract Documents

Unless otherwise provided in the Contract, the priority of the Contract documents shall be as follows:

1. The Letter of Acceptance
2. The Preamble
3. The Conditions of Contract, Part II
4. The Conditions of Contract, Part I
5. Any other documents forming part of the Contract.

5.4 Documents Mutually Explanatory

Subject to Sub-Clause 5.3. the Contract documents shall be taken as mutually explanatory. Any ambiguities or discrepancies shall be resolved by the Engineer, who shall then instruct the Contractor thereon.

If the Contractor considers that compliance with such instructions will result in any cost which the Contractor could not reasonably have anticipated, he shall forthwith inform the Engineer with full supporting details. The Engineer shall then, if he approves, certify such costs as may be reasonable, together with profit where appropriate, which shall be added to the Contract Price.

If on the other hand compliance with such instructions results in lower costs for the Contractor then he had reason to anticipate, the Engineer shall certify a deduction from the Contract Price allowing for profit where appropriate.

6.1 Contractor's Drawings

The Contractor shall submit to the Engineer for approval:

- (a) within the time given in the Contract or in the Programme such drawings, samples, models or information as may be called for therein, and in the numbers therein required, and
- (b) during the progress of the Works, such drawings of the general arrangement and details of the Works as specified in the Contract or as the Engineer may require.

The Engineer shall signify his approval or disapproval thereof. If he fails to do so within the time given in the Contract or the Programme or if no time limit is specified, within twenty eight (28) days of receipt, they shall be deemed to be approved.

Approved drawings, samples and models shall be signed or otherwise

identified by the Engineer.

The Contractor shall supply additional copies of approved drawings in the form and numbers stated in the Contract.

6.2 Consequences of Disapproval of Contractor's Drawings

Any Contractor's Drawings which the Engineer disapprove shall be forthwith modified to meet the requirements of the Engineer and shall be re-submitted.

6.3 Approved Contractor's Drawings

Approved Contractor's Drawings shall not be departed from except as provided in Clause 31.

6.4 Inspection of Contractor's Drawings

The Engineer shall have the right at all reasonable times to inspect, at Contractor's premises, all Contractor's Drawings of any part of the Works.

6.5 Erection Information

The Contractor shall provide, within the times stated in the Contract or in the Programme, drawings showing how the Plant is to be affixed and any other information required for:

- (a) preparing suitable foundations or other means of support;
- (b) providing suitable access on the Site for the Plant and any necessary equipment to the place where the Plant is to be erected; and
- (c) making necessary connections to the Plant.

6.6 Operation and Maintenance Manuals

Before the Works are taken over in accordance with Clause 29 the Contractor shall supply operation and maintenance manuals together with drawings of the Works as built. These shall be in such detail as will enable the Employer to operate, maintain, adjust and repair all parts of the Works.

Unless otherwise stated in Part II the manuals and drawings shall be in the ruling language, and in such form and numbers as stated in the Contract.

Unless otherwise agreed, the Works shall not be considered to be completed for the purposes of taking over until such manuals and drawings have been supplied to the Employer.

6.7 Employer's Use of Contractor's Drawings

Contractor's Drawings may be used by the Employer for no other purpose than completing, operating, maintaining, adjusting and repairing the Works.

6.8 Contractor's Use of Employer's Drawings

The Employer's Drawings, Specification and other information submitted by the Employer or the Engineer to the Contractor shall remain the property of the Employer. These shall not, without the consent of the Employer, be used, copied or communicated to a third party by the Contractor unless necessary for the purposes of the Contract.

6.9 Manufacturing Drawings

Unless otherwise specified in Part II, the Contractor shall not be required to disclose to the Employer or the Engineer the Contractor's confidential manufacturing drawings, designs, know-how or manufacturing practices, processes or operations.

7.1 Errors in Contractor's Drawings

The Contractor shall be responsible for any errors or omissions in the Contractor's Drawings unless they are due to incorrect Employer's Drawings or other written information supplied by the Employer or the Engineer. Approval by the Engineer of the Contractor's Drawings shall not relieve the Contractor from any responsibility under this Sub-Clause.

The Contractor shall bear any costs he may incur as a result of delay in providing Contractor's Drawings and other information or as a result of errors or omissions therein, for which the Contractor is responsible.

The Contractor shall at his own cost carry out any alterations or remedial work necessitated by such errors or omissions for which he is responsible and modify the Contractor's Drawings and such other information accordingly.

The performance of his obligations under this Clause shall be in full satisfaction of the Contractor's liability under this Clause but shall not relieve him of his liability under Sub-Clause 27.1.

7.2 Errors by Employer or Engineer

The Employer shall be responsible for the Employer's Drawings and for other written information supplied by the Employer or the Engineer and for the details of special work specified by either of them. If such Employer's Drawings, information or details are incorrect and necessitate alterations of the work, the Employer shall pay the Contractor the cost of the alterations together with profit as certified by the Engineer.

Obligations of the Contractor

8.1 General Obligations

The Contractor shall, in accordance with the Contract, with due care and diligence, design, manufacture, deliver to Site, erect, test and commission the Plant and carry out the Works within the Time for Completion. The Contractor shall also provide all necessary Contractor's Equipment,

superintendence, labour and, except as stated in Part II, all necessary facilities therefor.

8.2 Setting Out

The Contractor shall set out the Works in relation to original points, lines and levels of reference given by the Engineer in writing and provide all necessary instruments, appliances and labour for such purposes.

If, at any time during the execution of the Works, any error appears in the positions, levels, dimensions or alignment of the Works, the Contractor shall rectify the error.

The Contractor shall bear the cost of rectifying the error, unless the error results from incorrect information supplied in writing by the Employer, the Engineer or from default by another contractor, in which case the cost together with profit shall be borne by the Employer.

The checking of any setting-out by the Engineer shall not relieve the Contractor of his responsibility for the accuracy thereof.

9.1 Contract Agreement

The Contractor shall, if called upon so to do, execute a Contract Agreement recording all the terms of the Contract, to be prepared by and completed at the cost of the Employer in the form annexed hereto.

10.1 Performance Security

If Part II requires the Contractor to obtain a Performance Security, he shall obtain the same in the sum required, within twenty eight (28) days after the receipt of the Letter of Acceptance. The Performance Security shall be provided by a person and in a form approved by the Employer. The cost of complying with the requirements of this Clause shall be borne by the Contractor.

10.2 Period of Validity

The Performance Security shall be valid until the Contractor has executed, completed and remedied defects in the Works in accordance with the Contract. No claim shall be made against the Performance Security after the issue of the Defects Liability Certificate and the Performance Security shall be returned to the Contractor within fourteen (14) days of the issue of the Defects Liability Certificate.

10.3 Claims under Performance Security

Whether or not the Performance Security is stated by its terms to be payable on the demand of the Employer the Employer shall not make a claim under the Performance Security unless one of the following conditions is satisfied:

(a) the Contractor is in breach of the Contract and fails to remedy the breach within forty two (42) days after receiving written notice from the Employer requiring him so to do. The notice shall state the intention to claim under the Performance Security, the amount claimed and the breach relied upon, or

(b) the Employer and the Contractor have agreed in writing that the amount demanded is payable to the Employer, and the amount has not been paid within forty two (42) days thereafter, or

(c) the Employer has obtained an award in arbitration under Clause 50 and the amount awarded has not been paid within forty two (42) days after the award, or

(d) the Contractor has gone into liquidation or is bankrupt.

In every case the Employer shall, when making the claim, send a copy to the Contractor.

11.1 Site Data

The Tender shall be deemed to have been based on such data on climatic, hydrological and general conditions on the Site and for the operation of the Works as the Employer or the Engineer has made available to the Contractor for the purposes of the Tender. The Contractor shall be responsible for his own interpretation of such data.

11.2 Sufficiency of Contract Price

The Contractor shall be deemed to have satisfied himself on and taken account of in his Tender:

(a) all the conditions and circumstances affecting the Contract Price,

(b) the possibility of carrying out the Works as described in the Contract,

(c) the general circumstances at the Site (if access has been made available to him) and

(d) the general labour position at the Site.

The Contractor shall not be responsible for the accuracy of information given in writing by the Employer or the Engineer but shall be responsible for his interpretation of information received from whatever source.

11.3 Physical Obstructions and Conditions

If during the execution of the Works on Site the Contractor encounters physical obstructions or conditions of the kind stipulated in Sub-Clause 26.1.c) the Contractor shall be entitled to recover the additional cost incurred in consequence.

The Engineer shall certify and there shall be added to the Contract Price the

additional cost of:

(a) complying with any instruction which the Engineer, after due consultation with the Employer and the Contractor, issues to the Contractor in connection therewith, and

(b) any necessary measures which the Contractor may take in the absence of specific instructions from the Engineer.

12.1 Programme to be Furnished

The Contractor shall submit to the Engineer for his approval the Programme which shall contain the following:

(a) the order in which the Contractor proposes to carry out the Works (including design, manufacture, delivery to Site, erection, testing and commissioning),

(b) the times when submission and approval of the Contractor's Drawing are required,

(c) the times by which the Contractor requires the Employer:

(i) to furnish any Employer's Drawings,

(ii) to provide access to the Site,

(iii) to have completed the necessary civil engineering work (including foundations for the Plant) and

(iv) to have obtained any import licences, consents, wayleaves and approvals necessary for the purpose of the Works.

The Contractor shall submit the Programme in the form stated in the Preamble within twenty eight (28) days after the Commencement Date.

The approval by the Engineer of the Programme shall not relieve the Contractor or the Employer from any obligation under the Contract.

12.2 Alteration to Programme

No material alteration to the Programme shall be made without the approval of the Engineer.

12.3 Revision of Programme

If the progress of the Works does not conform to the Programme, the Engineer may instruct the Contractor to revise the Programme.

If such modifications are required for reasons for which the Contractor is not responsible, the cost of preparing the revised Programme shall be certified by the Engineer and added to the Contract Price.

13.1 Contractor's Representative

The Contractor shall employ one or more competent representatives to superintend the carrying out of the Works on Site. They shall be fluent in the language for day to day communications. Their names shall be communicated in writing to the Engineer before work on Site begins.

Any instruction or notice which the Engineer gives to the Contractor's representative shall be deemed to have been given to the Contractor.

13.2 Objection to Contractor's Employees

The Contractor shall, upon the Engineer's written instruction, remove from the Works any person employed by him in the execution of the Works, who misconducts himself or is incompetent or negligent.

14.1 Contractor's Equipment

Except to the extent specified in Part II, the Contractor shall provide all Contractor's Equipment necessary to complete the Works.

All Contractor's Equipment shall, when brought on to the Site, be deemed to be exclusively intended for the execution of the Works. The Contractor shall not remove from the Site any such equipment, except:

- (a) when it is no longer required for the completion of the Works, or
- (b) when the Engineer has given his consent.

14.2 Safety Precautions

The Contractor shall observe all applicable regulations regarding safety on the Site.

Unless otherwise agreed, the Contractor shall, from the commencement of work on Site until taking over provide:

- (a) fencing, lighting, guarding and watching of the Works, and
- (b) temporary roadways, footways, guards and fences which may be necessary for the accommodation and protection of owners and occupiers of adjacent property, the public and others.

14.3 Electricity Water and Gas

The Contractor shall be entitled to use for the purposes of the Works such supplies of electricity, water, gas and other services as may be available on the Site and of which details are given in the Preamble. The Contractor shall pay the Employer a fair price for such use. The Contractor shall at his own cost

provide any apparatus necessary for such use.

14.4 Employer's Equipment

The Employer shall, if the Contractor so requests for the execution of the Works, operate any available equipment of which details are given in the Preamble. The Contractor shall pay the Employer a fair price for such use.

The Employer shall during such operation retain control of and be responsible for the safe working of the equipment.

14.5 Clearance of Site

The Contractor shall from time to time during the progress of the Works clear away and remove all surplus materials and rubbish. On completion of the Works the Contractor shall remove all Contractor's Equipment and leave the whole of the Site and the Works clean and in a workmanlike condition, to the satisfaction of the Engineer.

14.6 Opportunities for Other Contractors

The Contractor shall, in accordance with the Engineer's instructions, afford to other contractors engaged by the Employer to work on the Site and persons lawfully upon the Site all reasonable opportunities for carrying out their work provided that the same shall not obstruct or disturb the progress of the Works. The Contractor shall also afford such opportunities to the employees of the Employer.

If the Contractor, on the written request of the Engineer, makes available any Contractor's Equipment or provides any other service, the Employer shall pay the Contractor accordingly. The amount to be paid shall be certified by the Engineer and added to the Contract Price.

14.7 Authority for Access

No persons other than the employees of the Contractor and his Subcontractors shall be allowed on the Site except with the consent of the Engineer.

Facilities to inspect the Works shall at all times be afforded by the Contractor to the Engineer and his representative, the Employer's representatives, authorities and officials.

14.8 Information for Import Permits and Licenses

The Contractor shall submit to the Employer in good time such details of all Plant and Contractor's Equipment as will enable the Employer to obtain all necessary import permits or licenses.

15.1 Compliance with Statutes, Regulations

The Contractor shall, in all matters arising in the performance of the Contract, comply in all respects with, give all notices and pay all fees required by the

provisions of any national or state statute, ordinance or other law or any regulation or bye-law of any duly constituted authority.

15.2 Compliance with Laws

The Contractor shall comply with the laws of the country of manufacture concerning the manufacture of the Plant, and the laws of the country where the Plant is to be erected so far as such laws concern the manufacture, erection and operation of the Works.

16.1 Patent Rights

The Contractor shall indemnify the Employer against all claims of infringement of any patent, registered design, copyright, trade mark or trade name or other intellectual property right provided that all of following conditions are satisfied:

- (a) The claim or proceedings arise out of the design, construction, manufacture or use of Works or any Plant supplied by the Contractor.
- (b) The right was protected at the date of the Contract in the Contractor's country or the country in which the Plant is to be manufactured or erected.
- (c) The infringement or allegation of infringement was not caused by any use of the Works otherwise than for purpose indicated by or reasonably to be inferred from date Specification.
- (d) The infringement or allegation of infringement was not caused by the use of any Plant in association or combination with any plant not supplied by the Contractor, unless such association or combination was disclosed to the Contractor prior to the due of the Tender.
- (e) The infringement of or allegation of infringement was not caused by the Contractor following the design or instructions of the Employer or the Engineer.

16.2 Claims in respect of Patent Right

The Contractor shall be promptly notified of any claim under this Clause made against the Employer. The Contractor may at his own cost conduct negotiations for the settlement of such claim, and any litigation that may arise there from.

The Employer shall not make any admission which might be prejudicial to the Contractor unless the Contractor has failed to take over the conduct of the negotiations or litigation within a reasonable time after having been so requested.

The Contractor may not, however, conduct such negotiations or litigation before he has given the Employer such reasonable security as the Employer may require. The security shall be for an amount which is an assessment of

the compensation, damages, expenses and costs for which the Employer may become liable and which are the subject of the indemnity under Sub-Clause 16.1.

The Employer shall, at the request of the Contractor, provide all available assistance for the purpose of contesting any such claim or action, and shall be repaid all reasonable costs incurred in so doing.

16.3 Employer's Warranty for Patent Rights

If any matter for which the Contractor is not liable to indemnify the Employer under Sub-Clause 16.1 causes the infringement or allegation of infringement by the Contractor of any patent, registered design, trade mark, copyright or other intellectual property right, the Employer shall indemnify the Contractor against all claims damages, expenses and costs which the Contractor may incur in relation thereto. The provisions of Sub-Clause 16.2 shall apply mutatis mutandis.

Obligations of the Employer

17.1 Access to and Possession of the Site

The Employer shall in reasonable time grant the Contractor access to and possession of the Site, which may, however, not be exclusive to the Contractor.

The Employer shall to the extent stated in the Specification provide means of access for the delivery of all Plant and Contractor's Equipment to the Site.

17.2 Assistance with Local Regulations

The Employer shall assist the Contractor in ascertaining the nature and extent of any laws, regulations, orders or bye-laws, and customs in the country where the Plant is to be erected, which may affect the Contractor in the performance of his obligations under the Contract. The Employer shall if so requested procure for the Contractor copies thereof and information relating thereto at the Contractor's cost.

17.3 Civil Works on Site

Any building, structure, foundation or means of access on the Site to be provided by the Employer shall be in a condition suitable for the reception, movement, installation and maintenance of the Works within the time or times indicated in the Programme.

17.4 Consents and Wayleaves

The Employer shall in due time obtain or grant all consents including permits-to-work, wayleaves and approvals required for the Works.

17.5 Import Permits and Licences

The Employer shall obtain all import permits or licences required for any part of the Plant or Works in reasonable time having regard to the time for delivery of the Plant and completion of the Works.

Labour

18.1 Engagement of Labour

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all labour and for their payment, housing feeding and transport.

18.2 Returns of Labour

The Contractor shall submit detailed returns showing the supervisory staff and the numbers of the several classes of labour from time to time employed by the Contractor and Subcontractors on the Site. The returns shall be submitted in such form and at such intervals as the Engineer may prescribe.

18.3 Working Hours

On the Site, the Contractor shall observe the normal working hours stated in the Preamble. The Employer shall allow the Contractor to carry out work on the Site continuously during such working hours.

The Engineer may after consulting the Employer and the Contractor, direct that work shall be done at other times. The extra cost, together with profit, shall be added to the Contract Price unless it has become necessary for the completion of the Works within the Time for Completion, and this is due to the default of the Contractor.

18.4 Restriction on Working Hours

No work shall be carried out on the Site outside normal working hours or on the locally recognised days of rest, unless:

- (a) the Contract so provides, or
- (b) the work is unavoidable or necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer, or
- (c) the Engineer gives his consent.

Workmanship and Materials

19.1 Manner of Execution

All Plant to be supplied shall be manufactured and all work to be done shall be executed in the manner set out in the Contract.

Where the manner of manufacture and execution is not set out in the Contract, the work shall be executed in a proper and workmanlike manner in accordance

with recognised good practice.

19.2 Covering up Work

The Contractor shall give the Engineer full opportunity to examine, measure and test any work on Site which is about to be covered up or put out of view.

The Contractor shall give due notice to the Engineer whenever such work is ready for examination, measurement or testing.

The Engineer shall then, unless he notifies the Contractor that he considers it unnecessary, without unreasonable delay carry out the examination, measurement or testing.

19.3 Uncovering Work

If so instructed by the Engineer, the Contractor shall expose any parts of the Works. The Contractor shall reinstate and make good such parts to the Engineer's satisfaction.

If any parts of the Works have been covered up or put out of view by the Contractor after complying with Sub-Clause 19.2 and are found to be in accordance with the Contract the cost incurred by the Contractor in complying with the Engineer's instructions including profit shall be certified by the Engineer and added to the Contract Price.

20.1 Independent Inspection

The Engineer may, if so provided in the Contract or with the Contractor's consent, delegate inspection and testing of Plant to an independent inspector. Any such delegation shall be effected in the manner required by Sub-Clause 2.3 and for this purpose such independent inspector shall be considered as an Engineer's Representative. Notice of such appointment (being not less than 14 days) shall be given by the Engineer to the Contractor.

20.2 Inspection and Testing During Manufacture

The Engineer shall be entitled during manufacture to inspect, examine and test the materials and workmanship and check the progress of manufacture of all Plant to be supplied under the Contract. This shall take place on the Contractor's premises during working hours. If Plant is being manufactured on other premises, the Contractor shall obtain permission for the Engineer to carry out such inspection, examination and testing on those premises.

No such inspection, examination or testing shall release the Contractor from any obligation under the Contract.

20.3 Dates for Inspection and Testing

The Contractor shall agree with the Engineer the time and place for the testing of any Plant as provided in the Contract. The Engineer shall give the Contractor 24 hours notice of his intention to attend the tests.

If the Engineer does not attend on the date agreed, the Contractor may, unless the Engineer instructs the Contractor not to do so, proceed with the tests, which shall be deemed to have been made in the Engineer's presence.

The Contractor shall forthwith forward to the Engineer duly certified copies of the test results. If the Engineer has not attended the test, he shall accept the validity of the test readings.

20.4 Facilities for Testing

Where the Contract provides for tests on the premises of the Contractor or of any Sub-Contractor, the Contractor shall provide such assistance, labour materials, electricity, fuel, stores, apparatus and instruments as may be necessary to carry out the test efficiently.

20.5 Certificate of Testing

When Plant has passed the tests referred to in this Clause, the Engineer shall furnish to the Contractor a certificate or endorse the Contractor's test certificate to that effect.

21.1 Rejection

If, as a result of the inspection, examination or testing referred to in Clause 20, the Engineer decides that any Plant is defective or otherwise not in accordance with the Contract, he may reject such Plant and shall notify the Contractor thereof immediately. The notice shall state the Engineer's objections with reasons. The Engineer shall not reject any Plant for minor defects which do not affect the commercial operation of such Plant.

The Contractor shall then with all speed make good the defect or ensure that any rejected Plant complies with the Contract.

If the Engineer requires such Plant to be retested, the tests shall be repeated under the same terms and conditions. All costs incurred by the Employer by the repetition of the tests shall be deducted from the Contract Price.

22.1 Permission to Deliver

The Contractor shall apply in writing to the Engineer for permission to deliver any Plant or Contractor's equipment to the Site. No Plant or Contractor's Equipment may be delivered to the Site without the Engineer's written permission.

The Contractor shall be responsible for the reception on Site of the Plant and Contractor's Equipment.

Suspension of Works, Delivery or Erection

23.1 Order to Suspend

The Engineer may at any time instruct the Contractor to:

- (a) suspend progress of the Works, or
- (b) suspend delivery of Plant or Contractor's Equipment which is ready for delivery to the Site at the time for delivery specified in the Programme, or if no time is specified, at the time appropriate for it to be delivered, or
- (c) suspend the erection of Plant which has been delivered to the Site.

When the Contractor is prevented from delivering or erecting Plant in accordance with the Programme the Engineer shall be deemed to have instructed a suspension except when such prevention is caused by the Contractor's default.

The Contractor shall during suspension protect and secure the Works or Plant affected at the Contractor's works or elsewhere or at the Site, as the case may be, against any deterioration, loss or damage.

24.1 Cost of Suspension

The additional cost incurred by the Contractor in protection, securing and insuring the Works or Plant and in following the Engineer's instructions under Sub-Clause 23.1 and in resumption of the work, shall be added to the Contract Price.

The Contractor shall not be entitled to be paid any additional costs if such suspension is necessary by reason of a default on the part of the Contractor.

The Contractor shall not be entitled to additional costs unless he notifies the Engineer of his intention to make such claim, within twenty eight (28) days after receipt of the order to suspend progress or delivery or of the date of deemed suspension under Sub-Clause 23.1.

24.2 Payment in Event of Suspension

The Contractor shall be entitled to payment for Plant which has not been delivered to Site if the work on Plant or delivery of Plant has been suspended for more than twenty eight (28) days. After twenty eight (28) days of suspension, the Contractor shall be entitled to payment of the value of such Plant as at the date of suspension.

A certificate of payment shall be issued on condition that:

- (a) the Contractor has marked the Plant as the Employer's property in accordance with the Engineer's instructions, and
- (b) the suspension is not due to the Contractor's default.

24.3 Prolonged Suspension

If suspension under Sub-Clause 23.1. has continued for more than eighty four (84) days, and the suspension is not due to the Contractor's default, the Contractor may by notice to the Engineer require permission to proceed within twenty eight (28) days.

If permission is not granted within that time, the Contractor may treat the suspension as an omission under Clause 31 of the Section it affects, or if the suspension affects the whole of the Works, terminate the Contract and the provisions of Clause 46 shall apply.

24.4 Resumption of Work

If the Contractor chooses not to treat prolonged suspension as an omission or termination under Sub-Clause 24.3, the Employer shall upon the request of the Contractor, take over the responsibility for protection, storage, security and insurance of the suspended Works and the risk of loss or damage thereto shall thereupon pass to the Employer.

After receipt of permission or an order to proceed, the Contractor, shall after due notice to the Engineer, examine the Works and the Plant affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works or Plant that may have occurred during the suspension. Cost properly incurred by the Contractor which would not have been incurred but for the suspension shall be added to the Contract Price together with profit.

The Contractor shall not be entitled to payment for costs incurred in making good any deterioration, defect or loss caused by faulty workmanship or materials or by the Contractor's failure to take the measures specified in Sub-Clause 23.1.

If the Employer has taken over risk and responsibility for the suspended Works under this Sub-Clause, risk and responsibility shall revert to the Contractor fourteen (14) days after receipt of the permission or order to proceed.

Completion

25.1 Time for Completion

The Works shall be completed and shall have passed the Tests on Completion within the Time for Completion

26.1 Extension of Time for Completion

The Contractor may claim an extension of the Time for Completion if he is or will be delayed in completing the Works by any of the following causes:

- (a) extra or additional work ordered in writing under Clause 31,

- (b) exceptional adverse weather conditions,
- (c) physical obstructions or conditions which could not reasonably have been foreseen by the Contractor,
- (d) Employer's or Engineer's instructions, otherwise than by reason of the Contractor's default,
- (e) the failure of the Employer to fulfil any of his obligations under the Contract,
- (f) delay by any other contractor engaged by the Employer,
- (g) any suspension of the Works under Clause 23, except when due to the Contractor's default,
- (h) any industrial dispute,
- (i) the Employer's Risks, or
- (j) Force Majeure.

The Contractor shall give to the Engineer notice of his intention to make a claim for an extension of time within fourteen (14) days of the circumstances for such a claim becoming known to the Contractor. The notice shall be followed as soon as possible by the claim with full supporting details.

The Engineer shall, after due consultation with the Employer and the Contractor, grant the Contractor from time to time, either prospectively or retrospectively, such extension of Time for Completions as may be justified. The Engineer shall notify the Employer and the Contractor accordingly.

The Contractor shall be entitled to such extension whether the delay occurs before or after the Time for Completion.

26.2 Delays by Subcontractors

The Contractor shall be entitled to claim an extension of time if delay on the part of a Subcontractor is due to a cause mentioned in Clause 26.1 and such delay prevents the Contractor from meeting the Time for Completion.

26.3 Earlier Completion

The Employer may require completion of the Works or part thereof earlier than the Time for Completion, on the following conditions:

- (a) The Employer and the Contractor shall first agree the extra sum to be paid for each day by which the Contractor completes the Works or part thereof earlier than the Time for Completion.
- (b) The Contractor shall not become liable under Sub-Clause 27.1 for any failure to complete the Works or the part thereof by the earlier time.

27.1 Delay in Completion

If the Contractor fails to complete the Works within the Time for Completion, the Employer shall be entitled to a reduction in the Contract Price unless it can be reasonably concluded from circumstance that the Employer will suffer no loss.

The Employer shall within a reasonable time give the Contractor notice of his intention to claim a reduction.

The reduction shall be the percentage per day stated in the Preamble of that part of the Contract Price which is attributable to such part of the Works as cannot in consequence of the failure be put to the intended use. The reduction shall be computed for each day between the Time for Completion and the actual date of completion.

The reduction shall in no case exceed the maximum percentage of the Contract Price of such part stated in the Preamble.

Except as provided in Sub-Clause 27.2, such reduction shall be to the exclusion of any other remedy of the Employer in respect of the Contractor's failure to complete within the Time for Completion.

27.2 Prolonged Delay

If the Employer has become entitled to the maximum reduction under Sub-Clause 27.1 for any part of the Works, he may by notice require the Contractor to complete. Such notice shall fix a final time for completion which shall be reasonable.

If the Contractor fails to complete within such time, and this is not due to a cause for which the Employer or some other contractor employed by him is responsible, the Employer may by further notice to the Contractor either:

- (a) require the Contractor to complete, or
- (b) may himself complete at the Contractor's cost provided that he does so in a reasonable manner, or
- (c) terminate the Contract.

If the Employer terminates the Contract, he shall be entitled to recover from the Contractor any loss he has suffered up to the maximum amount stated in the Preamble. If no maximum amount is stated, the Employer shall not be entitled to recover more than that part of the Contract Price which is attributable to that part of the Works which cannot by reason of the Contractor's failure be put to the intended use.

The Employer shall give credit for the value of any part of the Works which he retains.

Tests on Completion

28.1 Notice of Tests

The Employer shall give to the Engineer twenty one (21) day's notice of the date after which he will be ready to make the Tests on Completion (the Tests). Unless otherwise agreed, the Tests shall take place within fourteen (14) days after the said date on such day or days as the Engineer shall notify the Contractor.

28.2 Time for Tests

If the Engineer fails to appoint a time after having been asked to do so, or does not attend at the time and place appointed, the Contractor shall be entitled to proceed with the Test in his absence. The Tests shall then be deemed to have been made in the presence of the Engineer and the results of the Tests shall be accepted as accurate.

28.3 Delayed Tests

If the Tests are being unduly delayed by the Contractor the Engineer may by notice require the Contractor to make the Tests within twenty one (21) days after the receipt of such notice. The Contractor shall make the Tests on such days within that period as the Contractor may fix and of which he shall give notice to the Engineer.

If the Contractor fails to make the Tests within twenty one (21) days the Engineer may himself proceed with the Tests. All Tests so made by the Engineer shall be at the risk and cost of the Contractor and the cost thereof shall be deducted from the Contract Price. The tests shall then be deemed to have been made in the presence of the Contractor and the results of the Tests shall be accepted as accurate.

28.4 Facilities for Tests on Completion

Except where otherwise specified, the Employer shall provide free of charge such labour, materials, electricity, fuel, water, stores, apparatus and feedstock as may be reasonably required by the Contractor to carry out the Tests.

28.5 Retesting

If the Works or any Section fails to pass the Tests, the Engineer or the Contractor may require such Tests to be repeated on the same terms and conditions. All costs to which the Employer may be put by the repetition of the Tests under this Sub-Clause or under Sub-Clause 30.7 shall be deducted from the Contract Price.

28.6 Disagreement as to Result of Tests

If the Engineer and the Contractor disagree on the interpretation of the Test results, each shall give a statement of his views to the other within fourteen (14) days after such disagreement arises. The statement shall be accompanied by all relevant evidence.

28.7 Consequences of Failure to Pass Tests on Completion

If the Works or any Section fails to pass the Tests on the repetition thereof under Sub-Clause 28.5, the Engineer, after due consultation with the Employer and the Contractor, shall be entitled to:

- (a) order one further repetition of the Tests under the conditions of Sub-Clause 28.5, or
- (b) reject the Works or Section in which event the Employer shall have the same remedies against the Contractor as are provided under Sub-Clause 30.5 (c), or
- (c) issue a Taking-Over Certificate, if the Employer so wishes, notwithstanding that the Works are not complete. The Contract Price shall then be reduced by such amount as may be agreed by the Employer and the Contractor or, failing agreement, as may be determined by arbitration.

28.8 Use by the Employer

In considering the results of Tests carried out under Sub-Clauses 29.3, 29.4 and 30.7, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the Certificate to the performance or other characteristics of the Works.

28.9 Test Certificate

As soon as the Works or any Section thereof has passed the Tests, the Engineer shall issue a Certificate to the Contractor and the Employer to that effect.

Taking Over

29.1 Taking Over

The Works shall be taken over by the Employer when they have been completed in accordance with the Contract, except in minor respects that do not affect the use of the Works for their intended purpose, have passed the Tests on Completion and a Taking-Over Certificate has been issued or deemed to have been issued in accordance with Sub-Clause 29.2.

29.2 Taking-Over Certificate

The Contractor may apply by notice to the Engineer for a Taking-Over Certificate not earlier than fourteen (14) days before the Works will in the Contractor's opinion be complete and ready for taking over under Sub-Clause 29.1.

The Engineer shall within twenty eight (28) days after the receipt of the Contractor's application either:

- (a) issue the Taking-Over Certificate to the Contractor with a copy to the Employer stating the date on which the Works were complete and ready for taking over, or
- (b) reject the application giving his reasons and specifying the work required to be done by the Contractor to enable the Taking-Over Certificate to be issued.

If the Engineer fails either to issue the Taking-Over Certificate or to reject the Contractor's application within the period of twenty eight (28) days he shall be deemed to have issued the Taking-Over Certificate on the last day of that period.

If the Works are divided by the Contract into Sections the Contractor shall be entitled to apply for separate Taking-Over Certificate for each such Section

29.3 Use before Taking Over

The Employer shall not use any part of the Works unless a Taking-Over Certificate has been issued in respect thereof.

If nevertheless the Employer uses any part of the Works, that part which is used shall be deemed to have been taken over at the date of such use. The Engineer shall on request of the Contractor issue a Taking-Over Certificate accordingly. If the Employer uses any part of the Works before taking over the Contractor shall be given the earliest opportunity of taking such steps as may be necessary to carry out the Tests on Completion.

The provisions of Sub-Clause 27.1 shall not apply to any part of the Works while being so used by the Employer. Clause 30 shall apply as if the part had been taken over on the date it was taken into use.

29.4 Interference With Tests on Completion

If the Contractor is prevented from carrying out the Tests on Completion by a cause for which the Employer or the Engineer or other contractors employed by the Employer are responsible, the Employer shall be deemed to have taken over the Works on the date when the Tests on Completion would have been completed but for such prevention. The Engineer shall issue a Taking-Over Certificate accordingly.

The Works shall not be deemed to have been taken over if they are not substantially in accordance with the Contract.

If the Works are taken over under this Clause the Contractor shall nevertheless carry out the Tests on Completion during the Defects Liability Period. The Engineer shall require the Tests on Completion to be carried out by fourteen (14) days notice and in accordance with the relevant provisions of Clause 28.

Any additional costs to which the Contractor may be put in making the Tests on Completion during the Defects Liability Period, shall be added to the Contract Price.

Defects after Taking Over

30.1 Defects Liability Period

Where any part of the Works is taken over separately from the Works the Defects Liability Period for that part shall commence on the date it was taken over.

30.2 Making Good Defects

The Contractor shall, subject to Sub-Clause 30.9, be responsible of making good any defect in or damage to any part of the Works which may appear or occur during the Defects Liability Period and which arises from, either:

- (a) any defective materials, workmanship or design, or
- (b) any act or omission of the Contractor during the Defects Liability Period.

The Contractor shall make good the Defects or damage as soon as practicable and at his own cost.

30.3 Notice of Defects

If any such defect appears or damage occurs, the Employer or the Engineer shall forthwith notify the Contractor thereof.

30.4 Extension of Defects Liability Period

The provision of this Clause shall apply to all replacements or renewals carried out by the Contractor as if the replacements and renewals had been taken over on the date they were completed.

The Defects Liability Period for the Works shall be extended by a period equal to the period during which the Works cannot be used by reason of a defect or damage. If only part of the Works cannot be used by reason of a defect, the Defect Liability Period shall be extended only for that part.

In neither case shall the Defects Liability Period be extended by more than one year.

When erection or delivery of Plant has been suspended under Sub-Clause 23.1, the Contractor's obligations under this Clause shall not apply to any defects occurring more than three years after it would have been delivered but for the suspension or such period as may be stated in Part II.

30.5 Failure to Remedy Defects

If the Contractor fails to remedy a defect or damage within a reasonable time,

the Employer may fix a final time for remedying the defect or damage.

If the Contractor fails to do so, the Employer may:

- (a) carry out the work himself or by others at the Contractor's risk and cost, provided that he does so in a reasonable manner. The costs properly incurred by the Employer in remedying the defect or damage shall be deducted from the Contract Price, but the Contractor shall have no responsibility for such work, or
- (b) require the Contractor to grant the Employer a reasonable reduction in the Contract Price to be agreed or fixed by arbitration under Clause 50, or
- (c) if the defect or damage is such that the Employer has been deprived of substantially the whole of the benefit of the Works or a part thereof, he may terminate the Contract in respect of such parts of the Works as cannot be put to the intended use. The Employer shall to the exclusion of any remedy under Clause 45 be entitled to recover all sums paid in respect of such parts of the Works together with the cost of dismantling the same, clearing the Site and returning Plant to the Contractor or otherwise disposing of it in accordance with the Contractor's instructions.

30.6 Removal of Defective Work

If the defect or damage is such that repairs cannot be expeditiously carried out on the Site, the Contractor may with the consent of the Engineer or the Employer remove from the Site for the purposes of repair any part of the Works which is defective or damaged.

30.7 Further Tests on Completion

If the replacements or renewals are such that they may affect the performance of the Works the Employer may request that Tests on Completion be repeated to the extent necessary. The request shall be made by notice within twenty eight (28) days after the replacement or renewal. The Tests shall be carried out in accordance with Clause 28.

30.8 Right of Access

Until the Final Certificate of Payment has been issued, the Contractor shall have the right of access to all parts of the Works and to records of the working and performance of the Works.

Such right of access shall be during the Employer's normal working hours at the Contractor's risk and cost. Access shall also be granted to any duly authorised representative of the Contractor whose name has been communicated in writing to the Engineer.

Subject to the Engineer's approval, the Contractor may also at his own risk and cost make any tests which he considers desirable.

30.9 Defects in Employer's and Engineer's Designs

The Contractor shall not be liable for any defects resulting from designs furnished or specified by the Employer or the Engineer.

30.10 Contractor to Search

The Contractor shall, if required by the Engineer in writing, search for the cause of any defect, under the direction of the Engineer. Unless the defect is one for which the Contractor is liable under this Clause, the cost of the work carried out by the Contractor in searching for the cause of the defect shall be added to the Contract Price.

30.11 Defects Liability Certificate

When the Defects Liability Period for the Works or any part thereof has expired and the Contractor has fulfilled all his obligations under the Contract for defects in the Works or that part, the Engineer shall issue within twenty eight (28) days to the Employer and the Contractor a Defects Liability Certificate to that effect.

30.12 Exclusive Remedies

Except in the case of Gross Misconduct, the Employer's remedies under this Clause shall be in place of and to the exclusion of any other remedy in relation to defects whatsoever.

Variations

31.1 Engineer's Right to Vary

The Engineer may by Variation Order to the Contractor at any time before the Works are taken over, instruct the Contractor to alter, amend, omit, add to or otherwise vary any part of the Works.

The Contractor shall not vary or alter any of the Works, except in accordance with a Variation Order from the Engineer. The Contractor may, however, at any time propose variations of the Works to the Engineer.

31.2 Variation Order Procedure

Prior to any Variation Order under Sub-Clause 31.1 the Engineer shall notify the Contractor of the nature and form of such variation.

As soon as possible after having received such notice, the Contractor shall submit to the Engineer:

- (a) a description of work, if any, to be performed and a programme for its execution, and

- (b) the Contractor's proposals for any necessary modifications to the Programme according to Sub-Clause 26.1 or to any of the Contractor's obligations under the Contract, and
- (c) the Contractor's proposals for adjustment to the Contract Price.

Following the receipt of the Contractor's submission the Engineer shall, after due consultation with the Employer and the Contractor, decide as soon as possible whether or not the variation shall be carried out.

If the Engineer decides that the variation shall be carried out, he shall issue a Variation Order clearly identified as such in accordance with the Contractor's submission or as modified by agreement. If the Engineer and the Contractor are unable to agree the adjustment of the Contract Price, the provisions of Sub-Clause 31.3 shall apply.

31.3 Disagreement on Adjustment of the Contract Price

If the Contractor and the Engineer are unable to agree on the adjustment of the Contract Price, the adjustment shall be determined in accordance with the rates specified in the Schedule of Prices.

If the rates contained in the Schedule of Price are not directly applicable to the specific work in question, suitable rates shall be established by the Engineer reflecting the level of pricing in the Schedule of Prices.

Where rates are not contained in the said Schedule, the amount shall be such as is in all the circumstances reasonable. Due account shall be taken of any over-or under-recovery of overheads by the Contractor in consequence of the variation.

The Contractor shall also be entitled to be paid:

- (a) the cost of any partial execution of the Works rendered useless by any such variation,
- (b) the cost of making necessary alterations to Plant already manufactured or in the course of manufacture or of any work done that has to be altered in consequence of such a variation,
- (c) any additional costs incurred by the Contractor by the disruption of the progress of the Works as detailed in the Programme, and
- (d) the net effect of the Contractor's finance costs, including interest, caused by the variation.

The Engineer shall on this basis determine the rates or prices to enable on-account payment to be included in certificates of payment.

31.4 Contractor to Proceed

On receipt of a Variation Order, the Contractor shall forthwith proceed to

carry out the variation and be bound to these Conditions in so doing as if such variation was stated in the Contract.

The work shall not be delayed pending the granting of an extension of the Time for Completion or an adjustment to the Contract Price under Sub-Clause 31.3.

31.5 Records of Costs

In any case where the Contractor is instructed to proceed with variation prior to the determination of the adjustment to the Contract Price in respect thereof the Contractor shall keep records of the cost of undertaking the variation and of time expended thereon. Such records shall be open to inspection by the Engineer at all reasonable times.

Ownership of Plant

32.1 Ownership of Plant

Plant to be supplied pursuant to the Contract shall become the property of the Employer at whichever is the earlier of the following times:

- (a) when Plant is delivered to Site, or
- (b) when by virtue of Sub-Clause 24.2 the Contractor becomes entitled to payment of the value of the Plant.

Certificates and Payment

33.1 Terms of Payment

The terms of payment shall be as stated in the Preamble.

33.2 Method of Application

Unless otherwise specified in Part II applications by the Contractor for payment shall be made to the Engineer as follows:

- (a) in respect of the progress of the Works accompanied by such evidence of the value of the work done as the Engineer may require, and
- (b) in respect of Plant shipped and en route to the Site identifying the Plant concerned and accompanied by such evidence of shipment and of payment of freight and insurance and by such other documents as the Engineer may require, and
- (c) for additional payment in accordance with Clause 34.

Any other application for payment shall state the amounts claimed and the detailed particulars in respect of which the application is made.

33.3 Issue of Certificate of Payment

Within fourteen (14) days after receiving an application for payment which the Contractor was entitled to make the Engineer shall issue a Certificate of Payment to the Employer showing the amount due, with a copy to the Contractor.

A certificate of payment, other than the Final Certificate of Payment, shall not be withheld on account of:

- (a) defects of a minor character which are not such as to affect the use of the Works, or
- (b) any part of the payment applied for being disputed. In such case a certificate of payment for the undisputed amount shall be issued.

33.4 Corrections to Certificates of Payment

The Engineer may in any certificate of payment make any correction or modification that should properly be made in respect of any previous certificate.

33.5 Payment

Unless otherwise specified in Part II, the Employer shall pay the amount certified within twenty eight (28) days from the date of issue of each certificate of payment to the Contractor at his principal place of business.

33.6 Delayed Payment

If payment of any sum payable under Sub-Clause 33.5 is delayed, the Contractor shall be entitled to receive interest on the amount unpaid during the period of delay. Unless otherwise stated in Part II the interest shall be at the annual rate three percentage points above the discount rate of the central bank in the Contractor's country. The Contractor shall be entitled to such payment without formal notice and without prejudice to any other right or remedy.

33.7 Remedies on Failure to Certify or Make Payment

The Contractor shall be entitled to stop the Works by giving fourteen (14) days notice to the Engineer and the Employer, if either:

- (a) the Engineer fails to issue a certificate of payment upon proper application by the Contractor, or
- (b) the Employer fails to make any payment as provided in this Clause.

The cost to the Contractor together with profit occasioned by the stoppage and the subsequent resumption of work, shall be added to the Contract Price.

The Contractor shall also be entitled to terminate the Contract by giving twenty eight (28) days notice to the Engineer and the Employer in any case

where the Engineer has failed to issue a certificate of payment upon proper application by the Contractor.

33.8 Payment by Measurement

For any part of the Works which is to be paid according to quantity supplied or work done, the provisions for measurement shall be stated in Part II.

33.9 Application for Final Certificate of Payment

The Contractor shall make application to the Engineer for the Final Certificate of Payment within twenty eight (28) days after the issue of the Defect Liability Certificate, or if more than one, the last Defect Liability Certificate.

The application for the Final Certificate of Payment shall be accompanied by a final account prepared by the Contractor. The final account shall give full details of the value of all Plant supplied and work done under the Contract together with:

- (a) such additions to or deductions from the Contract Price as have been agreed, and
- (b) all claims for additional payment to which the Contractor may consider himself entitled.

33.10 Issue of Final Certificate of Payment

The Engineer shall issue to the Employer with a copy to the Contractor, the Final Certificate of Payment within 28 days after receiving an application in accordance with Sub-Clause 33.9.

If the Contractor has not applied for a Final Certificate of Payment within the time specified in Sub-Clause 33.9 the Engineer shall request the Contractor to do so within a further period of 28 days. If the Contractor fails to make such an application, the Engineer shall issue the Final Certificate of Payment for such amount as he deems correct.

33.11 Final Certificate of Payment Conclusive

A Final Certificate of Payment shall be conclusive evidence of the value of the Works, that the Works are in accordance with the Contract and that the Contractor has performed all his obligations under the Contract.

Payment of the amount certified in the Final Certificate of Payment shall be conclusive evidence that the Employer has performed all his obligations under the Contract.

A Final Certificate of Payment or payment shall not be conclusive:

- (a) to the extent that fraud or dishonesty relates to or affects any matter dealt with in the certificate, or

- (b) if any arbitration or court proceedings under the Contract have been commenced by either party before the expiry of 84 days after the issue of the Final Certificate of Payment.

Claims

34.1 Procedure

In any case where under these Conditions there are circumstances which the Contractor considers entitle him to claim additional payment, the Contractor shall:

- (a) if he intends to make any claim for additional payment give to the Engineer notice of his intention to make such claim within twenty eight (28) days after the said circumstances became known to the Contractor stating the reasons for his claim, and
- (b) as soon as reasonably practical after the date of such notice submit to the Engineer full and detailed particulars of his claim but not later than one hundred and eighty two (182) days after such notice unless otherwise agreed by the Engineer. In any event such particulars shall be submitted no later than the application for the Final Certificate of Payment. The Contractor shall thereafter promptly submit such further particulars as the Engineer may reasonably require to assess the validity of the claim.

34.2 Assessment

When the Engineer has received full and detailed particulars of the Contractor's claim in accordance with Sub-Clause 34.1 and such further particulars as he may reasonably have required he shall after due consultation with the Employer and the Contractor determine whether the Contractor is entitled to additional payment and notify the parties accordingly.

The Engineer may reject any claim for additional payment which does not comply with the requirements of Sub-Clause 34.1.

Foreign Currency and Rates of Exchange

35.1 Payment in Foreign Currencies

Arrangements for payment in foreign currencies shall be as stated in the Preamble.

35.2 Currency Restrictions

The Employer shall reimburse the Contractor for any loss arising from:

- (a) currency restrictions, and
- (b) restrictions on the transfer of currency in which the Contractor is to be paid which are imposed by the government or authorized agency of the government of the country from which any payments under the Contract are to be made.

This Sub-Clause only applies to restrictions imposed after the date 28 days prior to the latest date for submission of tenders for the Works.

35.3 Rates of Exchange

Where the Contract provides for payment in Foreign Currency the rates of exchange between the currencies shall be fixed for the purpose of the Contract and shall be as stated in the Preamble.

If such rates of exchange are not stated in the Preamble the rates to be used shall be those quoted by the central bank of the country whose currency is to be sold 28 days or the nearest day thereto prior to the latest date for submission of tenders for the Works.

Provisional Sums

36.1 Use of Provisional Sums

A Provisional Sum shall only be used, in whole or in part in accordance with the Engineer's instructions.

The total sum paid to the Contractor shall include only such amounts in respect of work, supplies or services to which such Provisional Sums relate as the Engineer shall have instructed.

36.2 Ordering Work against Provisional Sums

In respect of every Provisional Sum the Engineer may after due consultation with the Employer and the Contractor order:

- (a) work to be executed, including goods, materials or services to be supplied by the Contractor. The value of such work executed, determined in accordance with Clause 31, shall be paid to the Contractor in accordance with Clause 33, and
- (b) goods and materials to be purchased by the Contractor, for which payment will be made in accordance with Sub-Clause 36.4.

36.3 Invoices and Receipts

The Contractor shall, when required by the Engineer, produce quotations,

invoices, vouchers and accounts or receipts in connection with expenditure in respect of Provisional Sums.

36.4 Payment against Provisional Sums

For all work executed or goods, materials or services supplied or purchased by the Contractor under Sub-Clause 36.2(b), there shall be included in the sums paid to the Contractor:

- (a) the actual price paid or due to be paid by the Contractor, and
- (b) in respect of all other charges and profit, a percentage of the actual price paid or due to be paid. Such percentage shall be as stated in the Preamble.

Risk and Responsibility

37.1 Allocation of Risk and Responsibility

The Risks of loss of or damage to physical property and of death and personal injury which arise in consequence of the performance of the Contract shall be allocated between the Employer and the Contractor as follows:

- (a) the Employer: the Employer's Risks as specified in Sub-Clause 37.2
- (b) the Contractor: the Contractor's Risks as specified in Sub-Clause 37.3.

37.2 Employer's Risks

The Employer's Risks are:

- (a) war and hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, revolution, insurrection, military or usurped power or civil war insofar as it relates to the country in which the Works are located or countries through which plant must be transported,
- (c) ionising radiation or contamination by radio-activity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosives or other hazardous properties of any explosive nuclear assembly or nuclear components thereof,
- (d) pressure waves caused by aircraft travelling at sonic or supersonic speed,
- (e) riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Subcontractors,

- (f) use or occupation of the Works or any part thereof by the Employer,
- (g) fault, error, defect or omission in the design of any part of the Works by the Engineer, Employer or those for whom the Employer is responsible,
- (h) the use or occupation of the Site by the Works or any part thereof, or for the purposes of the Contract; or interference, whether temporary or permanent with any right of way, light, air or water or with any easement, wayleaves or right of a similar nature which is the inevitable result of the construction of the Works in accordance with the Contract,
- (i) the right of the Employer to construct the Works or any part thereof on, over, under, in or through any land,
- (j) damage (other than that resulting from the Contractor's method of construction) which is the inevitable result of the construction of the Works in accordance with the Contract,
- (k) the act, neglect or omission or breach of contract or of statutory duty of the Engineer, the Employer or other contractors engaged by the Employer or of their respective employees or agents,

and all risks which an experienced contractor could not have foreseen or, if foreseeable, against which measures to prevent loss, damage or injury from occurring could not reasonably have been taken by such contractor.

37.3 Contractor's Risks

The Contractor's Risks are all risks other than those identified as the Employer's Risks.

Care of the Works and Passing of Risk

38.1 Contractor's Responsibility for the Care of the Works

The Contractor shall be responsible for the care of the Works or any Section thereof from the Commencement until the Risk Transfer Date applicable thereto under Sub-Clause 38.2.

The Contractor shall also be responsible for the care of any part of the Works upon which any outstanding work is being performed by the Contractor during the Defects Liability Period until completion of such outstanding work.

38.2 Risk Transfer Date

The Risk Transfer Date in relation to the Works or a Section thereof is the earliest of either:

- (a) the date of issue of the Taking-Over Certificate, or
- (b) the date when the Engineer is deemed to have issued the Taking Certificate or the Works are deemed to have been taken over in

accordance with Clause 29, or

- (c) the date of expiry of the notice of termination when the Contract is terminated by the Employer or the Contractor in accordance with these Conditions.

39.1 Passing of Risk of Loss of or Damage to the Works

The risk of loss of or damage to the Works or any Section thereof shall pass from the Contractor to the Employer on the Risk Transfer Date applicable thereto.

39.2 Loss or Damage Before Risk Transfer Date

Loss of or damage to the Works or any Section thereof occurring before the Risk Transfer Date shall:

- (a) to the extent caused by any of the Contractor's Risks, be made good forthwith by the Contractor at his own cost, and
- (b) to the extent caused by any of the Employer's Risks, be made good by the Contractor at the Employer's expense if so required by the Engineer within twenty eight (28) days after the occurrence of the loss or damage. The price for making good such loss and damage shall be in all circumstances reasonable and shall be agreed by the Employer and the Contractor, or in the absence of agreement, shall be fixed by arbitration under Clause 50.

39.3 Loss or Damage After Risk Transfer Date

After the Risk Transfer Date, the Contractor's liability in respect of loss of or damage to any part of the Works shall, except in the case of Gross Misconduct, be limited:

- (a) to the fulfillment of the Contractor's obligations under Clause 30 in respect of defects therein, and
- (b) to making good forthwith loss or damage caused by the Contractor during the Defects Liability Period.

Damage to Property and Injury to Persons

40.1 Contractor's Liability

Except as provided under Sub-Clause 41.1, the Contractor shall be liable for and shall indemnify the Employer against all losses, expenses and claims in respect of any loss of or damage to physical property (other than the Works), death or personal injury occurring before the issue of the last Defects Liability Certificate to the extent caused by:

- (a) defective design, material or workmanship of the Contractor, or
- (b) negligence or breach of statutory duty of the Contractor, his Subcontractors or their respective employees and agents.

40.2 Employer's Liability

The Employer shall be liable for and shall indemnify the Contractor against all losses, expenses or claims in respect of loss of or damage to any physical property or of death or personal injury whenever occurring, to the extent caused by any of the Employer's Risks.

41.1 Accidents

The Contractor shall be liable for and shall indemnify the Employer against all losses, expenses or claims arising in connection with the death of or injury to any person employed by the Contractor or his Subcontractors for the purposes of the Works, unless caused by any acts or defaults of the Engineer, the Employer, or other contractors engaged by the Employer or by their respective employees or agents. In the latter cases the Employer shall be liable for and shall indemnify the Contractor against all losses, expenses and claims arising in connection therewith.

Limitations of Liability

42.1 Liability for Indirect or Consequential Damage

Neither party shall be liable to the other for any loss of profit, loss of use, loss of production, loss of contracts or for any other indirect or consequential damage that may be suffered by the other, except:

- (a) as expressly provided in Clause 27, and
- (b) those provisions of these Conditions whereby the Contractor is expressly entitled to receive profit.

42.2 Maximum Liability

The liability of the Contractor to the Employer under these Conditions shall in no case exceed the sum stated in the Preamble or, if no such sum is stated, the Contract Price.

42.3 Liability after Expiration of Defects Liability Period

The Contractor shall have no liability to the Employer for any loss of or damage to the Employer's physical property which occurs after the expiration of the Defects Liability Period unless caused by Gross Misconduct of the Contractor.

42.4 Exclusive Remedies

The Employer and the Contractor intend that their respective rights, obligations and liabilities as provided for in these Conditions shall alone govern their rights under the Contract and in relation to the Works.

Accordingly, the remedies provided under the contract in respect of or in consequence of:

- (a) any breach of contract, or
- (b) any negligent act or omission, or
- (c) death or personal injury, or
- (d) loss or damage to any property

are, save in the case of Gross Misconduct, to be to the exclusion of any other remedy that either may have against the other under the law governing the Contract or otherwise.

42.5 Mitigation of Loss of Damage

In all cases the party claiming a breach of Contract or a right to be indemnified in accordance with the Contract shall be obliged to take all reasonable measures to mitigate loss or damage which has occurred or may occur.

42.6 Foreseen Damage

Where either the Employer or the Contractor is liable in damages to the other these shall not exceed the damage which the party in default could reasonably have foreseen at the date of the Contract.

Insurance

43.1 The Works

The Contractor shall insure the Works in the joint names of the Contractor and the Employer to their full replacement value with deductible limits not exceeding those stated in the Preamble.

- (a) from the Commencement Date until the Risk Transfer Date against any loss or damage caused by any of the Contractor's Risks and any other risks specified in the Preamble, and
- (b) during the Defects Liability period against any loss or damage which is caused either:
 - (i) by the Contractor in completing any outstanding work or complying with his obligations under Clause 30, or
 - (ii) by any of the Contractor's Risks which occurred prior to the Risks

Transfer Date.

43.2 Contractor's Equipment

The Contractor shall insure Contractor's Equipment for its full replacement value whilst in transit to the Site, from commencement of loading until completion of unloading at the Site and while on the Site against all loss or damage caused by any of the Contractor's Risks.

43.3 Third Party Liability

The Contractor shall insure against liability to third parties for any death or personal injury and loss of or damage to any physical property arising out of the performance of the Contract and occurring before the issue of the last Defects Liability Certificate.

Such insurance shall be effected before the Contractor begins any work on the Site. The insurance shall be for not less than the amount specified in the Preamble.

43.4 Employees

The Contractor shall insure and maintain insurance against his liability under Sub-Clause 41.1.

43.5 General Requirements of Insurance Policies

The Contractor shall:

- (a) whenever required by the Employer produce the policies or certificates of any insurance which he is required to effect under the Contract together with receipts for the premiums,
- (b) effect all insurances for which he is responsible with an insurer and in terms approved by the Employer,
- (c) make no material alterations to the terms of any insurance without the Employer's approval. If an insurer makes any material alteration to the terms the Contractor shall forthwith notify the Employer, and
- (d) in all respect comply with any conditions stipulated in the insurance policies which he is required to place under the Contract.

43.6 Permitted Exclusions from Insurance Policies

The insurance cover affected by the Contractor may exclude any of the following:

- (a) the cost of making good any part of the Works which is defective or otherwise does not comply with the Contract provided that it does not exclude the cost of making good any loss or damage to any other part of the Works attributable to such defect or non-compliance,

- (b) indirect or consequential loss of damage including any reductions in the Contract Price for delay,
- (c) wear and tear, shortages and theft, or
- (d) risks relating to vehicles for which third party or other insurance is required by law.

43.7 Remedies on the Contractor's Failure to Insure

If the Contractor fails to produce evidence of insurance cover as stated in Sub-Clause 43.5 (a) then the Employer may effect and keep in force such insurance. Premiums paid by the Employer for this purpose shall be deducted from the Contract Price.

43.8 Amounts not Recovered

Any amounts not recovered from the insurers shall be borne by the Employer or Contractor in accordance with their responsibilities under Clause 37.

Force Majeure

44.1 Definition of Force Majeure

Force Majeure means any circumstances beyond the control of the parties, including but not limited to:

- (a) war and other hostilities, (whether war be declared or not), invasion, act of foreign enemies, mobilisation, requisition or embargo,
- (b) ionising radiation or contamination by radio-activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosives, or other hazardous properties of any explosive nuclear assembly or nuclear components thereof,
- (c) rebellion, revolution, insurrection, military or usurped power and civil war,
- (d) riot, commotion or disorder, except where solely restricted to employees of the Contractor.

44.2 Effect of Force Majeure

Neither party shall be considered to be in default or in breach of his obligations under the Contract to the extent that performance of such obligations is prevented by any circumstances of Force Majeure which arise after the date of the Letter of Acceptance or the date when the Contract becomes effective, whichever is the earlier.

44.3 Notice of Occurrence

If either party considers that any circumstances of Force Majeure have occurred which may affect performance of his obligations he shall promptly

notify the other party and the Engineer thereof.

44.4 Performance to Continue

Upon the occurrence of any circumstances of Force Majeure the Contractor shall endeavour to continue to perform his obligations under the Contract so far as reasonably practicable. The Contractor shall notify the Engineer of the steps he proposes to take including any reasonable alternative means for performance which is not prevented by Force Majeure. The Contractor shall not take any such steps unless directed so to do by the Engineer.

44.5 Additional Costs caused by Force Majeure

If the Contractor incurs additional costs in complying with the Engineer's directions under Sub-Clause 44.4, the amount thereof shall be certified by the Engineer and added to the Contract Price.

44.6 Damage Caused by Force Majeure

If in consequence of Force Majeure the Works shall suffer loss or damage the Contractor shall be entitled to have the value of the work done, without regard to the loss or damage that has occurred, included in a Certificate of Payment.

44.7 Termination in Consequence of Force Majeure

If circumstances of Force Majeure have occurred and shall continue for a period of one hundred and eighty two (182) days then, notwithstanding that the Contractor may by reason thereof have been granted an extension of Time for Completion of the Works, either party shall be entitled to serve upon the other twenty eight (28) days' notice to terminate the Contract. If at the expiry of the period of twenty eight (28) days Force Majeure shall still continue the Contract shall terminate.

44.8 Payment on Termination for Force Majeure

If the Contract is terminated under Sub-Clause 44.7 the Contractor shall be paid the value of the work done.

The contractor shall also be entitled to receive:

- (a) the amounts payable in respect of any preliminary items so far as the work or service comprised therein has been carried out and a proper proportion of any such item in which the work or service comprised has only been partially carried out,
- (b) the cost of materials or goods ordered for the Works or for use in connection with the Works which have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery. Such materials or goods shall become the property of and be at the risk of the Employer when paid for by the Employer and the Contractor shall place

the same at the Employer's disposal,

- (c) the amount of any other expenditure which in the circumstances was reasonably incurred by the Contractor in the expectation of completing the whole of the Works,
- (d) the reasonable cost of removal of Contractor's Equipment from the Site and the return thereof to the Contractor's works in his country or to any other destination at no greater cost, and
- (e) the reasonable cost of repatriation of the Contractor's staff and workmen employed wholly in connection with the Works at the date of such termination.

44.9 Release from Performance

If circumstances of Force Majeure occur and in consequence thereof under the law governing the Contract the parties are released from further performance of the Contract, the sum payable by the Employer to the Contractor shall be the same as that which would have been payable under Sub-Clause 44.8 if the Contract had been terminated under Sub-Clause 44.7.

44.10 Force Majeure Affecting Engineer's Duties

The provisions of Clause 44 shall also apply in circumstances where the Engineer is prevented from performing any of his duties under the Contract by reason of Force Majeure.

Default

45.1 Notice of Default

If the Contractor is not executing the Works in accordance with the Contract or is neglecting to perform his obligations thereunder so as seriously to affect the carrying out of the Works, the Engineer may give notice to the Contractor requiring him to make good such failure or neglect.

45.2 Contractor's Default

If the Contractor:

- (a) has failed to comply within a reasonable time with a notice under Sub-Clause 45.1, or
- (b) assigns the Contract or subcontracts the whole of the Works without the Employer's written consent, or
- (c) becomes bankrupt or insolvent, has a receiving order made against him or compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors or goes into liquidation.

The Employer may, after having given seven (7) days notice to the Contractor, terminate the Contract and expel the Contractor from the Site.

Any such expulsion and termination shall be without prejudice to any other rights or powers of the Employer, the Engineer or the Contractor under the Contract.

The Employer may upon such termination complete the Works himself or by any other contractor.

45.3 Valuation at Date of Termination

The Engineer shall, as soon as possible after such termination, certify the value of the Works and all sums then due to the Contractor as at the date of termination in accordance with Clause 33.

45.4 Payment after Termination

The Employer shall not be liable to make any further payments to the Contractor until the Works have been completed. When the Works are so complete, the Employers shall be entitled to recover from the Contractor the extra costs, if any, of completing the Works after allowing for any sum due to the Contractor under Sub-Clause 45.3. If there is no such extra cost the Employer shall pay any balance due to the Contractor.

45.5 Effect on Liability for Delay

The Contractor's liability under Clause 27 shall immediately cease when the Employer expels him from the Site without prejudice to any liability thereunder that may have already occurred.

46.1 Employer's Default

The Contractor may, by giving fourteen (14) days notice to the Employer and the Engineer, terminate the Contract if the Employer:

- (a) fails to pay the Contractor the amount due under any certificate of the Engineer within twenty eight (28) days after the amount became payable, or
- (b) interferes with or obstructs the issue of any certificate of the Engineer, or
- (c) becomes bankrupt or insolvent, has a receiving order made against him, compounds with his creditors, or carries on business under a receiver, trustee or manager for the benefit of his creditors or goes into liquidation, or goes into liquidation, or
- (d) consistently fails to meet his contractual obligations, or
- (e) appoints, a person to act with or in replacement of the Engineer without the Contractor's consent.

Any such termination shall be without prejudice to any other rights of the Contractor under the Contract.

46.2 Removal of Contractor's Equipment

On such termination, the Contractor shall be entitled to remove immediately all Contractor's Equipment which is on the Site.

46.3 Payment on Termination for Employer's Default

In the event of such termination the Employer shall pay the Contractor an amount calculated in accordance with Sub-Clause 44.8.

The Employer shall pay in addition the amount of any loss or damage, including loss of profit which the Contractor may have suffered in consequence of termination. The additional amount shall, however, not exceed the limit specified in the Preamble.

Change in Cost and Legislation

47.1 Labour, Materials and Transport

Where the Contract Price is to be adjusted for changes in the cost of labour, materials, transport or other costs of execution of the Works, the method for calculating such adjustment shall be specified in the Preamble.

When calculating the adjustment no account shall be taken of any increased cost which results from the Contractor's default or negligence.

47.2 Statutory and Other Regulations

The Contract Price shall be adjusted to take account of any increase or decrease in cost resulting from changes in legislation of the country where the Site is located or in its generally accepted interpretation.

Legislation means any law, order, regulation or bye-law having the force of law, which affects the Contractor in the performance of his obligations under the Contract, made after the date 28 days prior to the latest date for submission of tenders for the Works.

The Engineer shall certify the amount of the resulting increase or decrease in cost, which shall be added to or deducted from the Contract Price.

Customs

48.1 Customs and Import Duties

Unless otherwise stated in Part II the Employer shall pay all customs, import duties and taxes in consequence of the importation of Plant. If the Contractor is required to pay such customs, import duties and taxes, the Employer shall reimburse the amount thereof.

48.2 Clearance through Customs

The Employer shall assist the Contractor in obtaining clearance through the customs of all Plant and Contractor's Equipment and in procuring any necessary government consent to the re-export of Contractor's Equipment when it is removed from the Site.

Notices

49.1 Notices to Contractor

All certificates, notices or written orders to be given to the Contractor by the Employer or the Engineer under these Conditions shall be sent by airmail post, cable, telex or facsimile transmission to or left at the Contractor's principal place of business or such other address as the Contractor shall nominate for that purpose, or may be handed over to the Contractor's representative.

49.2 Notice to Employer and Engineer

Any notice to be given to the Employer or to the Engineer under these Conditions shall be sent by airmail post, cable, telex or facsimile transmission to or left at the respective addresses nominated for that purpose in the Preamble, or handed over to the Engineer's or the Employer's representative authorised to receive it.

49.3 Minutes of Meetings

Instructions or notices to the Contractor and notices from the Contractor to the Engineer or the Employer recorded in a minute or protocol signed by the authorized representatives of the giver and recipient of such notice or instruction shall be valid notice or instruction for the purposes of the Contract.

Disputes and Arbitration

50.1 Disputes concerning Engineer's Decisions

If either party is dissatisfied with a decision or instruction of the Engineer as confirmed, reversed or varied in accordance with Clause 2 he may refer the matter to arbitration pursuant to Sub-Clause 50.2.

Unless the dissatisfied party has notified the other party and the Engineer within fifty six (56) days of such decision or instruction of his intention to refer the matter to arbitration, he shall be deemed to have accepted the decision as final.

Reference to arbitration shall not relieve the Contractor of his obligation to proceed with the Works in accordance with the Engineer's decision or instruction, nor relieve the Employer of any of his obligations under the Contract.

The Contractor shall in any such arbitration be at liberty to rely on reasons additional to the reasons stated in the notice given under Sub-Clause 2.7.

50.2 Arbitration

If at any time any question, dispute or difference shall arise between the Employer and the Contractor in connection with or arising out of the Contract or the carrying out of the Works either party shall be entitled to refer the matter to be finally settled by arbitration in accordance with the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with those Rules, or by arbitration in accordance with such other rules as are specified in Part II.

The Arbitrators(s) shall have full power to open up, review and revise:

- (a) any decision or instruction of the Engineer referred to arbitration pursuant to Sub-Clause 50.1, and
- (b) any certificate of the Engineer related to the dispute.

50.3 Works to Continue

Performance of the Contract shall continue during arbitration proceedings unless the Employer shall order suspension. If any such suspension is ordered the reasonable costs incurred by the Contractor and occasioned thereby shall be added to the Contract Price.

No payments due or payable by the Employer shall be withheld on account of pending reference to arbitration.

50.4 Time Limit for Arbitration

Formal notice of arbitration must be given to the other party, and where required to the appropriate arbitration body, no later than eighty four (84) days after the issue of the Final Certificate of Payment

Law and Procedure

51.1 Applicable Law

The law which is to apply to the Contract and under which the Contract is to be construed is stated in the Preamble.

51.2 Procedural Law

The law governing the procedure and administration of any arbitration instituted pursuant to Clause 50 is stated in the Preamble.

51.3 Language

The language and place of the arbitration are stated in the Preamble.

**PARTICULAR CONDITIONS
OF
CONTRACT**

PART-II: PARTICULAR CONDITIONS OF CONTRACT

These Conditions of Particular Application Part-II are additions, deletions and amendment to General Conditions of Contract Part-I. Clause Nos., if similar as of Part-I are amendments therein otherwise these are additional clauses or sub-clauses thereto.

This Contract is a single responsibility EPC/Turnkey Contract for all the purposes. Any mentions or descriptions and intents in this Contract Agreement which are contrary to the spirit of EPC/Turnkey Contract shall be ignored.

1.1 Definitions

The text of Sub-Clause 1.1.1 is deleted and substituted by the following:

“Commencement Date” means the date specified in the Preamble to Conditions of Contract.

The text of Sub-Clause 1.1.2 is deleted and substituted by the following:

“Conditions” means the Preamble to Conditions of Contract, General Conditions of Contract (GCC) and Particular Conditions of Contract (PCC).

Sub-Clause 1.1.3

At the end of Sub-Clause, the following is added:

“Any subsequent document mutually agreed and signed by the Employer and the Contractor, shall be the part of the Contract.”

Sub-Clause 1.1.5

The text of Sub-Clause 1.1.5 is deleted and substituted by the following:

“Contract Price” means the sum stated in the Letter of Acceptance as payable to the Contractor for the design, execution and completion of the Works subject to such additions thereto or deductions therefrom as may be made under the provisions hereinafter contained and remedying of any defects therein in accordance with the provisions of the Contract”.

Sub-Clause 1.1.11

The Defects Liability Period is the period mentioned in the Preamble to Conditions of Contract.

Sub-Clause 1.1.15

The following is added at the beginning of this Sub-Clause:

“For the purpose of this EPC/Turnkey and O&M Contract, based on two party agreement, the term Engineer is construed as Project Manager/Engineer. The Project Manager is a Person appointed by the Employer to act on behalf of the Employer for the purpose of the Contract whereas the Engineer has the same meaning as defined in GCC

Sub-Clause 1.1.15.”

The following is added at the end of the Sub-Clause:

“or any other competent person appointed by the Employer as his replacement.”

Sub-Clause 1.1.16

The term “Engineer’s Representative” is replaced with the term “Project Manager/Engineer’s Representative”.

Sub-Clause 1.1.23

The following paragraph is added:

The word ‘Good’ is synonymous with the word “Plant”.

The text of **Sub-Clause 1.1.27** is deleted and substituted by the following:

“Schedule of Prices” means the completed and priced Schedule of Prices, or any part or individual schedule thereof, submitted by the Contractor with his Bid or revised and mutually agreed and forming a part of the Contract Documents.

Add the following at the end of Sub-Clause 1.1.33:

The word “Tender” is synonymous with the word “Bid” and the word ‘Tender Documents’ with “Bidding Documents” including technical bid is also part of it.

The following new Sub-Clauses 1.1.38 to 1.1.49 are added:

1.1.38 “Month” means calendar month according to Gregorian calendar.

1.1.39 “Operation and Maintenance Manuals” has the meaning described in Sub-Clause 6.6.”

1.1.40 “Warranty Certificate” means the certificate against specified goods/equipment, for the period mentioned in the Preamble to Conditions of Contract, to be issued by the Contractor that the goods/equipment supplied under the Contract are new, unused and incorporate all recent improvements in design and materials unless provided otherwise in the Contract and that the Contractor will be responsible for making good or replacing any defective goods/equipment during the Warranty Period specified in the Preamble to Conditions of Contract which should commence after expiry of Defect Liability Period.

Sub-Clause 1.1.41

The word ‘Part II’ wherever appearing in FIDIC Conditions of Contract is synonymous with the words “Particular Conditions of Contract”.

Sub-Clause 1.1.42

The words ‘Local Goods’ is synonymous with the words “Indigenous Goods” and the word ‘Installation’ with “Erection”.

Sub-Clause 1.1.43

“EPC/Turnkey and O&M Basis” means where the Contractor takes total responsibility for design and execution of the project with little involvement of the Employer. Under the usual arrangements of turnkey projects the contractor carries out all the Engineering, Procurement and Construction (EPC) providing a fully equipped facility ready for operation.

Total responsibility of the Contractor include; but not limited to; design, supply, installation and commissioning of all mechanical and electrical equipment, civil and other works necessary for the completion and commercial operation of the Plant and shall include all such items of Plant and equipment or work, whether mentioned in the Specifications, Bid drawings, Schedule of Prices or not, which are required to make the Plant operationally complete in accordance with the guarantees prescribed under the Contract

Sub-Clause 1.1.44

“Constructional Plant” means all appliances or things of whatsoever nature (other than Temporary Works) required for execution and completion of the Works and the remedying of any defects therein but does not include Plant, materials or other things intended to form or forming part of Permanent Works. The word ‘Constructional Plant’ is synonymous with “Contractor’s Equipment”.

Sub-Clause 1.1.45

“Contractor’s Agent” means the person for the time being or from time to time appointed by the Contractor pursuant to the provisions of Clause 13. The word “Contractor’s Agent” is synonymous with” Contractor’s Representative”.

Sub-Clause 1.1.46

“Performance Tests” means tests intended to demonstrate the attainment of guaranteed contract performance to be conducted in accordance with the requirement of the Specifications.

Sub-Clause 1.1.47

“Reliability Test” means such test or tests as are provided for in the Contract, or as may be agreed upon, which shall be successfully completed as a pre-requisite to Taking Over.

Sub-Clause 1.1.48

“Temporary Works” means all temporary works of every kind (other than Contractor’s Equipment) required in or about the execution and completion of the Works and the remedying of any defects therein.

Sub-Clause 1.1.49

“Permanent Works” means the permanent works to be executed (including Plant) in

accordance with the Contract.

Sub-Clause 1.6 Costs, Overhead Charges and Profit

The last sentence “Any profit _____ stated in the Preamble” is deleted and substituted by the following:
“Any profit entitlement shall be added to cost at the percentage stated in the Bid and agreed in the Contract Agreement.”

Sub-Clause 2.1 Project Manager/Engineer’s Duties

The text of Sub-Clause 2.1 is deleted and substituted by the following:

“The Project Manager/Engineer shall carry out the duties specified in the Contract.

The Project Manager/Engineer may exercise the authority attributable to the Project Manager/Engineer as specified in or necessarily to be implied from the Contract. The Project Manager/Engineer is required to obtain the specific approval of the Employer before carrying out his duties in accordance with the following Clauses of General Conditions of Contract (GCC):

- (a) approval of Subcontractor under Sub-Clause 4.1,
- (b) certifying additional sums under Sub-Clause 5.4,
- (c) certifying additional costs under Sub-Clauses 11.3 & 12.3,
- (d) certifying any cost under Sub-Clause 14.6,
- (e) approval of extension of time under Clause 26,
- (f) issuing a Taking–Over Certificate under Sub-Clause 29,
- (g) issuing a Defects Liability Certificate under Sub-Clause 30.11,
- (h) issuing a Variation Order under Clause 31,
- (i) fixing rates or prices under Clauses 31 and 34,
- (j) certifying additional costs under Sub-Clause 44.5 and
- (k) certifying additional costs under Sub-Clause 47.2;

Except for such variations pursuant to Sub-Clause 31.1 of the GCC which may be necessary in an emergency affecting safety of life, the Works or of adjoining property.

Except as expressly stated in the Contract, the Project Manager/Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract.”

Sub-Clause 2.6 Confirmation in Writing

- (i) In line 3 after the words “undue delay” the following is added:
“but not after the number of days mentioned in the Preamble to Conditions of Contract from the instruction or decision”.

(ii) At the end of Sub-Clause 2.6, the following is added:

"The Project Manager/Engineer shall confirm or otherwise within the period mentioned in the Preamble to Conditions of Contract from the receipt of requirement(s) from the Contractor".

Sub-Clause 2.8 Replacement of Project Manager/Engineer

The text of Sub-Clause 2.8 is deleted in its entirety and substituted by the following:

"If the Employer intends to replace the Project Manager/Engineer, the Employer shall, not less than fourteen (14) days before the intended date of replacement, give notice to the Contractor, of the name, address and relevant experience of the intended replacement Project Manager/Engineer. The Employer shall not replace the Project Manager/Engineer with a person against whom the Contractor raises reasonable objection by notice to the Employer, with supporting particulars."

The following new Sub-Clause 2.9 is added:

"Sub-Clause 2.9 Project Manager/Engineer Not Liable

Approval, reviews and inspection by the Project Manager/Engineer of any part of the Works does not relieve the Contractor from his sole responsibility and liability for the supply of remaining materials and equipment for the Works and parts thereof and complete the remaining erection works and testing and commissioning in accordance with the Contract and neither the Project Manager/Engineer's authority to act nor any decision made by him in good faith as provided for under this Contract whether to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Project Manager/Engineer to the Contractor, any Subcontractor, any of their representatives or employees or any other person performing any of the Works. However the Contractor shall be compensated if any loss/damage is occurred due to the decision of the Project Manager/Engineer."

The following new Sub-Clause 4.2 is added:

"Sub-Clause 4.2 No Contractual Relation between Subcontractor and the Employer

Nothing contained in the Contract Documents shall create any contractual relation between any Subcontractor and the Employer."

Sub-Clause 5.3 Priority of Contract Documents

The text of Sub-Clause 5.3 is deleted and substituted by the following:

"Unless otherwise provided in the Contract, the priority of the Contract Documents shall be as follows:

1. The Contract Agreement (if completed)
2. The Letter of Acceptance
3. The completed Letters of Technical and Price Bids
4. Preamble to Conditions of Contract

5. The Particular Conditions of Contract
6. The General Conditions of Contract
7. The priced Schedule of Prices
8. The completed Schedules to Bid (A to L)
9. The Specifications
10. The Drawings
11. Any other document forming part of the Contract.

In case of discrepancies between drawings, those of larger scale shall govern unless they are superseded by drawing(s) of a later date regardless of scale. All drawings and specifications shall be interpreted in conformity with the Contract Agreement and these conditions.”

Sub-Clause 5.4 Documents Mutually Explanatory

The text appearing in the last line after the words “the Contract Price” is deleted and the following text is added:

“The Technical Specifications are taken to be correct, but complete accuracy is not guaranteed. Any error or ambiguity must be reported to the Employer and the Project Manager/Engineer before starting the work affected. In the event of any dispute arising as to the true intended meaning of Technical Specification, the Project Manager/Engineer shall interpret the same and his interpretation shall be accepted as final and binding upon all parties concerned, except to the extent provided for in the Arbitration provisions hereof.”

Sub-Clause 6.2 Consequences of Disapproval of Contractor's Drawings

Full stop in the last line is deleted and the following words are added at the end of the Sub-Clause:

“for the approval of the Project Manager/Engineer. However, the Contractor shall not be entitled for time extension on this account”.

Sub-Clause 6.6. Operation and Maintenance Manuals

Paras 2 & 3 are deleted and the following text is added at the end of Para 1 of Sub-Clause:

“The Operation and Maintenance Manuals shall include full instructions for the operation, servicing and maintenance of the Plant, not only during the period of the Contractor's liability but more particularly during its operating life.

The directions shall be set out simply, clearly and systematically. This may be divided into two volumes if desirable, one for operation and the second for servicing and maintenance (in sub-volumes for major items of Plant).

The operational data shall include a complete physical and functional description of the Plant (in sub-volumes for major items of Plant) and step-by-step procedures for inspection, checking and adjustments for proper operation of the Plant.

The maintenance data shall include complete instructions for routine checks, servicing, maintenance and repair of all parts and for dismantling, handling and re-assembly of all equipment, sub-assemblies and all separate components. The maintenance data shall also include where possible parts catalogues. The lists shall provide all necessary information for identifying the parts and for re-ordering the parts including name of part, part number and catalogue references where applicable, name of manufacturer, size, capacity and other characteristics .

General arrangements, single line diagrams and detailed drawings shall be provided for ready reference in the operation and maintenance instructions.

The manuals shall be printed on ISO paper size A4 (210x297 mm) with offset or equivalent printing strongly bound in a durable stiff cover bearing the title in approved legend. Drawings shall be folded or reduced to 297 mm height. All volumes shall bear on the spine an approved shortened version of the title.

The Contractor shall submit three (3) draft copies for approval of the Project Manager/Engineer prior to producing finished volumes.

The Contractor shall provide seven (7) copies of the approved Operation and Maintenance Manuals prior to Taking Over by the Employer. Supplementary Operation and Maintenance Manual shall be provided by the Contractor, if required, to incorporate changes resulting from experience during the operation and maintenance period. The work shall not be considered to be completed for the purpose of taking over until such manual and drawings have been supplied to the Employer.”

Sub-Clause 6.9 Manufacturing Drawings

The words “Unless otherwise specified in Part-II” are deleted and the following is added at the end of Sub-Clause:

“However, the Contractor is required to disclose to the Project Manager/Engineer or the Employer any confidential information necessary to justify the reliability, the efficiency and the operation and maintenance of the Plant supplied by him.”

The following new Sub-Clauses 6.10 and 6.11 are added:

Sub-Clause 6.10 “As-Built” Drawings

The Contractor shall furnish to the Project Manager/Engineer six (6) copies and one (1) reproducible of approved quality of all “As-Built” drawings within the period mentioned in the Preamble to Conditions of Contract. All drawings shall also be provided in an electronic form (CD).

Sub-Clause 6.11 Shop Drawings

The Contractor shall submit to the Project Manager/Engineer for review three (3) copies of all shop and site erection work drawings in 1:4 scale seeking approval of the Project Manager/Engineer.

Review and approval by the Project Manager/Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory and that the Project Manager/Engineer's review or approval shall not relieve the Contractor of any of his responsibilities under the Contract."

Sub-Clause 8.1 General Obligations

The text of Sub-Clause 8.1 is deleted and substituted by the following:

- “(a) The Contractor shall commence the work on the date specified in the Preamble to Conditions of Contract and shall proceed with the same with due expedition and without delay.
- (b) The Contractor shall, in accordance with the Contract, with due care and diligence, complete the Works and test and commission the Plant and carry out the Works within the Time for Completion. The Contractor shall also provide all necessary Contractor's Equipment, superintendence, labour and except as stated herein below, all necessary facilities therefor.

The Employer will permit use of the Erection and Testing Equipment and Maintenance Tools as given in the Preamble to Conditions of Contract.

The above facilities shall be provided at no cost to the Contractor but he shall procure at his cost all required consumable materials and any other items necessary for the proper execution of the Works. These shall be properly used and maintained by the Contractor and returned to the Employer upon handing over of the Works in good condition, fair wear and tear excepted. In case of any damage, loss or theft, the items shall be replaced by the Contractor at his own cost.”

Sub-Clause 10.1 Performance Security

The text of Sub-Clause 10.1 is deleted and substituted by the following:

“The Contractor shall provide a Performance Security in the prescribed Form annexed to these Documents. The said Security shall be furnished by the Contractor within ten (10) days after the receipt of Letter of Acceptance. The Performance Security shall be of an amount equal to 10 percent of the Contract Price in the currency (ies) of the Contract in the form of Bank Guarantee from any Scheduled Bank of Pakistan.

The performance security shall be valid for twenty eight (28) days beyond defect liability period and the amount shall be reduced to 5% during defects liability period.

The cost of complying with the requirements of this Sub-Clause shall be borne by the Contractor”.

Sub-Clause 10.3 Claims under Performance Security

Sub-Clause 10.3 is deleted in its entirety.

The following new Sub Clause 10.4 is added:

Sub-Clause 10.4 Performance Security Binding on Variations and Changes

“The Performance Security shall be binding irrespective of variations and changes in the quantities of the Works or extensions in completion time of the Works, which are granted or agreed upon under the provisions of the Contract.”

Sub-Clause 11.1 Site Data

The following paragraphs are added at the end of Sub-Clause:

“The Contractor shall satisfy himself as to the nature of the ground, the hydrological and climatic conditions, the form and nature of the Site, the quantities and nature of the Work and materials necessary for the completion of the Works, and the means of access to the Site, the accommodation he may require and in general shall himself obtain all necessary information as to risks, contingencies, and other circumstances which may influence or affect his Bid.

The Employer does not guarantee the correctness of any data/information/drawings either verbal and/or written provided herein nor any interpretations, deductions or conclusions relative to conditions at Site. The Contractor must form his own opinion of the character of the work and of the materials to be excavated etc. He must make his own interpretations, and satisfy himself by his own investigations and research regarding all conditions affecting the work to be done. The Contractor must assume all responsibility for deductions and conclusions as to the nature or conditions of the materials to be excavated and of doing other work affected by the geology at the Site.”

Sub-Clause 12.1 Programme to be Furnished

(1) The text of Sub-Clause 12.1(a) is deleted and substituted by the following:

“(a) the order in which the Contractor proposes to carry out the Works (including preliminaries, required material ordering, delivery to Site, construction, erection and rectifications work, testing, commissioning of the Plant including design and construction of associated civil works and taking-over by the Employer). The programme on critical activity based format and resource planning schedule shall be prepared. The programme shall also include the following:

- (i) Employment of local and expatriate labour of various categories;
- (ii) Local material procurement; and
- (iii) Material imports, if any.”

(2) The text of Sub-Clause 12.1(c) is deleted and substituted by the following:

“(c) The Contractor requires the Employer:

- (i) to furnish any Employer’s Drawings;
- (ii) to provide access to the Site;
- (iii) to have completed the civil engineering works; and
- (iv) to have obtained consents, way leaves and approvals necessary for the purpose of the Works.”

- (3) The second last sentence of Sub-Clause 12.1 is deleted and substituted by the following:

“The programme is to be furnished by the Contractor within twenty eight (28) days from the date of receipt of Letter of Acceptance. Rs..... per day as delay damages shall be deducted for delay beyond this period. “The Project Manager/Engineer” proposed changes/modifications may also be incorporated and revised program shall be submitted within fifteen (15) days.”

The following new Sub-Clauses 12.4 and 12.5 are added:

Sub-Clause 12.4 Monthly Progress Report

During the period of the Contract, the Contractor shall submit six (6) sets of monthly progress report to the Project Manager/Engineer not later than the 8th day of each month including:

- (i) a construction schedule indicating the progress achieved during the preceding month;
- (ii) description of all work carried out since the last report;
- (iii) description of the work planned for the next forty-two (42) days sufficiently detailed to enable the Project Manager/Engineer to determine his programme of inspection and testing;
- (iv) summary of daily job record for the preceding month;
- (v) colour digital photographs to illustrate progress.

Sub-Clause 12.5 Daily Job Record

“During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be made available to the Project Manager/Engineer as and when requested.

The daily record shall include particulars of weather conditions, number of men working in different categories, deliveries of materials, quantity, location and assignment of equipment.”

Sub-Clause 13.1 Contractor's Representative

At the end of the Sub-Clause, the following is added:

“The Contractor's Representative shall be a competent and skilled person approved by the Project Manager/Engineer (which approval may at any time be withdrawn). He shall be present on the Site during all working hours and shall not be transferred from the Site without the consent of the Project Manager/Engineer. The Contractor's Representative shall be a registered professional engineer as defined in the Pakistan Engineering Council Act 1975 (V of 1976).”

The following new Sub-Clauses 13.3 and 13.4 are added:

Sub-Clause 13.3 Language Ability of Superintending Staff of Contractor

A reasonable proportion of the Contractor's superintending staff shall have a working knowledge of the English language.

Sub-Clause 13.4 Employment of Local Personnel

“The Contractor shall, to the extent practicable and reasonable, employ staff and labour from sources within Pakistan.”

Sub-Clause 14.1 Contractor's Equipment

Replace the word “or” at the end of Sub-paragraph (a) by “and” and insert the following at the end of Sub-paragraph (b):

“which shall not be unreasonably withheld.”

Sub-Clause 14.2 Safety Precautions

At the end of the Sub-Clause, the following is added:

“In order to provide for the safety, health and welfare of persons, and for prevention of damage of any kind, all operations for the purposes of or in connection with the Contract shall be carried out in compliance with the safety requirements of the Government of Pakistan with such modifications thereto as the Project Manager/Engineer may authorize or direct and the Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Project Manager/Engineer may determine to be reasonably necessary for such purpose.

The Contractor shall make, maintain, and submit reports to the Project Manager/Engineer concerning safety, health and welfare of persons and damage to property as the Project Manager/Engineer may from time to time prescribe.”

Sub-Clause 14.3 Electricity, Water and Gas

The text of Sub-Clause 14.3 is deleted and substituted by the following:

“The Contractor shall be responsible for making his own arrangements for the adequate supply of electricity, water and gas required for the effective performance of his obligations under the Contract. Subject to the aforesaid, the Contractor shall be entitled to use for the purposes of the Works such supplies and services as may be available on the Site. The Contractor shall, before the commencement of the work at Site, seek the approval of the Project Manager/Engineer as to his detailed requirements of electricity, water and gas for the entire Contract period. The Contractor shall pay the Employer at the rates/cost incurred by the Employer. The Contractor shall at his own cost provide any apparatus necessary for such use”. The contractor will bear the cost of distribution network for electricity, potable water, telephone, gas and their consumption by his own personnel for the purpose of the work.”

Sub-Clause 14.4 Employer's Equipment

The text of Sub-Clause 14.4 is deleted and substituted by the following:

“The Employer shall, if the Contractor so requests for the execution of the works, operate any available equipment of which details are given in the Preamble to Conditions of Contract. The Contractor shall pay the Employer a mutually agreed price for such use.

The Employer shall during such operation retain control of and be responsible for the safe working of the equipment.”

Sub-Clause 14.8 Information for Import Permits & Licenses

The text of Sub-Clause 14.8 is deleted and substituted by the following:

“The Contractor shall submit to the Employer in good time such details of all Plant and Contractor's Equipment to be imported into Pakistan and identify as to what assistance of the Employer is required for obtaining by the Contractor of all necessary import permits or licenses”.

Sub-Clause 15.2 Compliance with Laws

The text of Sub-Clause 15.2 is deleted and substituted by the following:

“The Contractor shall comply with the Laws of country of manufacture and the Laws of Pakistan where the Plant is to be erected”.

The following new Sub-Clauses 16.4 and 16.5 are added:

Sub-Clause 16.4 Photographs of Works and Advertisement Prohibited

Except with the prior written authorization of the Employer the Contractor shall not exhibit or permit to be exhibited any photographs or advertisement on the Works. Any authorized exhibition shall be immediately removed if the Employer so requires.

Sub-Clause 16.5 Training of Employer's/Consultant's Staff

The Contractor shall provide such facilities for the training of such numbers of Pakistani engineers, engineering students, apprentices and trade apprentices on such sections of the Works at the Site or on the Contractor's premises or Contractor selected plant manufacturer's premises and factories, or wherever else work is in hand, as specified or directed by the Project Manager/Engineer. The Employer shall direct what sums by way of wages and allowances are to be paid by the Contractor to such persons and shall reimburse the Contractor for such sums as are so directed to be paid and are paid. The Contractor shall also provide medical expenses or medical insurance and travelling expenses for trainees if required by the Employer which shall be reimbursed by the Employer.

The language of training at the above stated premises shall be English and Urdu.”

Sub-Clause 17.4 Consents and Way Leaves

The text of Sub-Clause 17.4 is deleted and substituted by the following:

“The Employer shall issue permissions, letters, certificates and provide such other assistance to the Contractor for his obtaining permits-to-work, way leaves and approvals from any other department/authority and right of way from private owners, if required. The Contractor will bear the cost of logistics, fees, etc. for such activities. The Employer, will reimburse the Contractor only the payments made by him in respect of any land compensation for obtaining such way leaves, required for the Works.”

Sub-Clause 17.5 – Import Permits and Licences

The word “Employer” is deleted and substituted by the word “Contractor” and the following is added at the end of Sub-Clause 17.5:

“The Employer will provide assistance for this purpose.”

Sub-Clause 18.1 – Engagement of Labour

At the end of the Clause the following is added:

“in accordance with the regulations, orders and requirements of the Government of Pakistan”.

The following new Sub-Clauses 18.5 to 18.16 are added:

Sub-Clause 18.5 Employment of Persons in the Service of Others

The Contractor shall not recruit or attempt to recruit his staff and labour from amongst the persons in the service of the Employer or the Project Manager/Engineer and vice-versa, unless mutually agreed between the Employer/Project Manager/Engineer and the Contractor.

Sub-Clause 18.6 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the statutes, Ordinances and Government Regulations or Orders for the time being in force, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or suffer any such importation, sale gift, barter or disposal by his Subcontractors, agents, employees or labour.

Sub-Clause 18.7 Arms and Ammunition

The Contractor shall not give, barter or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

Sub-Clause 18.8 Festivals and Religious Customs

The Contractor shall in all dealings with his staff and labour have due regard to all

recognized festivals, days of rest and religious or other customs.

Sub-Clause 18.9 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful riotous or disorderly conduct by or amongst his staff and labour and for the preservation of peace and protection of persons and property in the neighborhood of the Works against the same.

Sub-Clause 18.10 Records of Safety and Health

The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Project Manager/Engineer may from time to time prescribe.

Sub-Clause 18.11 Reporting of Accidents

The Contractor shall report to the Project Manager/Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition to appropriate action required under the law, notify the Project Manager/Engineer immediately by the quickest available means.

Sub-Clause 18.12 Compliance by Subcontractors

The Contractor shall be responsible for compliance by his Subcontractors of the foregoing provisions.

Sub-Clause 18.13 Housing for Labour

Save insofar as the Contract otherwise provides, the Contractor shall provide and maintain such housing accommodation and amenities as he may consider necessary for all his supervisory staff and labour, employed for the purposes of or in connection with the Contract including all fencing, electricity supply, sanitation, cookhouses, fire prevention, water supply and other requirements in connection with such housing accommodation or amenities. On completion of the Contract, these facilities shall be handed over to the Employer or if the Employer so desires, the temporary camps or housing provided by the Contractor shall be removed and the Site reinstated to its original condition, all to the approval of the Project Manager/Engineer.

Sub-Clause 18.14 Epidemics

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government, or the local medical or sanitary authorities, for purpose of dealing with and overcoming the same.

Sub-Clause 18.15 Supply of Water

The Contractor shall, so far as is reasonably practicable, having regard to local conditions, provide on the Site, to the satisfaction of the Project Manager/Engineer or his representative, adequate supply of drinking and other water for the use of his staff and labour.

Sub-Clause 18.16 Compliance by Subcontractors

The Contractor shall be responsible for compliance by his Subcontractors of the foregoing provisions.”

Sub-Clause 19.1 Manner of Execution

The following is added at the end of Sub-Clause:

“The Contractor shall submit for approval of the Project Manager/Engineer, his detailed method statement(s) for the execution of such items of work as may be desired by the Project Manager/Engineer. Approval of such method statement(s) shall neither relieve the Contractor of his responsibilities under the Contract nor form any basis for claiming additional costs.”

Sub-Clause 19.3 Uncovering Work

The following is added at the end of second paragraph of Sub-Clause 19.3:

“In any other case, all costs shall be borne by the Contractor.”

The following new Sub-Clause 19.4 is added:

Sub-Clause 19.4 Use of Pakistani Materials

“The Contractor shall so far as may be consistent with the Contract make the maximum use of materials, supplies and equipment indigenous to or produced in Pakistan and services available in Pakistan or operated in Pakistan provided such materials, supplies, equipment and services shall be of required standard.”

The following new Sub-Clause 20.6 is added:

Sub-Clause 20.6 Witnessing of Factory Acceptance Tests (as applicable):

Factory acceptance tests shall be witnessed by the personnel (one each) of the Employer and the Project Manager/Engineer. All costs in connection with witnessing of the factory acceptance tests by the Employer and the Project Manager/Engineer shall be borne by the Contractor. These shall include the costs of air travel (economy class) from Pakistan to place of inspection/testing and back, hotel accommodation/boarding/lodging (as per actual), inland transportation and daily allowance @ US Dollars per day per person for inspection/testing to be conducted outside Pakistan and Rs. per day per person [besides other costs of travelling and lodging etc. (as above)] for inspection/testing to be conducted inside Pakistan for each visit of every person to witness these tests.

Sub-Clause 24.1 Cost of Suspension

At the end of the second paragraph after the word “Contractor” the following is added:

“or for the proper execution or for the safety of the Works or Plant unless such necessity results from any act or default of the Project Manager/Engineer or the Employer or in consequence of any of the Employer's Risks under Sub-Clause 37.2.”

Sub-Clause 24.4 Resumption of Work

First paragraph of Sub-Clause 24.4 is deleted and substituted by the following:

“If the Contractor chooses not to treat prolonged suspension as an omission or termination under Sub-Clause 24.3, the Employer shall, upon the request of the Contractor, take over the responsibility for protection, storage, security and insurance of the suspended Works and of the Plant which has been delivered to the Site and which is affected by suspension and the risk of loss or damage thereto shall thereupon pass to the Employer”.

Sub-Clause 25.1 Time for Completion

The text of Sub-Clause 25.1 is deleted and substituted by the following:

“The Works at the place of the project mentioned in the Preamble to Conditions of Contract shall be completed tested and commissioned within the period mentioned in the Preamble to Conditions of Contract.”

Sub-Clause 26.1 Extension of Time for Completion

Sub-Clause 26.1(h) is deleted.

Sub-Clause 26.3 Earlier Completion

- (i) At the end of Sub-Clause 26.3(a) the following text is added and Clause is re-designated as 26.3.

“The extra sum to be paid to the Contractor for Completion of Works prior to the date of Completion established under Sub-Clause 25.1 shall be computed on the basis of the sums mentioned in the Preamble to Conditions of Contract.”

- (ii) Sub-Clause 26.3 (b) is deleted.

The following new Sub-Clause 26.4 is added:

Sub-Clause 26.4 Rate of Progress

“If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Project Manager/Engineer, too slow to comply with the Time for Completion, the Project Manager/Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Project Manager/Engineer, to expedite progress so as to comply with the Time for Completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Project Manager/Engineer under this Clause, the Contractor considers that it is necessary to do any work at night or on locally recognized days of rest, he shall be entitled to seek the consent of the Project Manager/Engineer so to do. Provided that if any steps, taken by the Contractor in meeting his obligations under this Sub-Clause, involve the Employer in additional supervision costs, such costs shall, after due consultation with the Employer and the Contractor, be determined by the Project Manager/Engineer and

shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any moneys due or to become due to the Contractor and the Project Manager/Engineer shall notify the Contractor accordingly, with a copy to the Employer.”

Sub-Clause 27.1 Delay in Completion

The text of Sub-Clause 27.1 is deleted and substituted by the following:

“If the Contractor fails to deliver the Works, or any part thereof, within the time stated in Sub-Clause 25.1, or fails to complete the whole of the Work, or, if applicable, any Section within the relevant time prescribed by Sub-Clause 25.1, then the Contractor shall pay to the Employer the relevant sum stated herein below as liquidated damages for such default (which sum shall be the only moneys due from the Contractor for such default) for every day or part of a day which shall elapse between the relevant time for Delivery or Time for Completion and the actual date of delivery at site or the date stated in a Taking-Over Certificate of the whole of the Works or the relevant Section, as the case may be, subject to the applicable limit stated herein below.

The Employer may deduct the amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

The liquidated damages for each day of delay and the maximum amount of liquidated damages shall be the amounts mentioned in the Preamble to Conditions of Contract.”

Sub-Clause 28.7 Consequences of Failure to Pass Tests on Completion

The words “by arbitration” appearing at the end of the Sub-Clause 28.7(c) are deleted and substituted by the words “by the Project Manager/Engineer”.

Sub-Clause 30.4 Extension of Defects Liability Period

At the end of 4th paragraph of Sub-Clause the following is added:
“or a mutually agreed period.”

Sub-Clause 30.5 Failure to Remedy Defects

In first line after the words “reasonable time” the following is added:
“fixed by the Project Manager/Engineer”.

The following new Sub-Clause 30.13 is added:

Sub-Clause 30.13 Unfulfilled Obligations

“After the Defects Liability Certificate has been issued, the Contractor and the Employer shall remain liable for the fulfillment of any obligation which remains unperformed at that time. For the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force.”

Sub-Clause 31.1 Project Manager/Engineer's Right to Vary

The following is added at the end of second paragraph:

“No such variation shall in any way vitiate or invalidate the Contract, but the effect, if any, of all such variations shall be valued in accordance with Clause 31. Provided that whether the issue of an instruction to vary the Works is necessitated by some default of or breach of Contract by the Contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the Contractor”.

Sub-Clause 31.5 Records of Costs

The word “Engineer” in 4th line of Sub-Clause is deleted and substituted by “Project Manager/Engineer/Employer”.

The following new Sub-Clauses 31.6 and 31.7 are added:

Sub-Clause 31.6 Daywork under Variation Order

A Variation Order may provide that work done pursuant thereto shall be executed as Daywork, if applicable in the opinion of the Project Manager/Engineer. In such case the Contractor shall be paid for such work under the conditions and the rates and prices set out in the Day Work Schedule.

Sub-Clause 31.7 Value Engineering

The Contractor may, at any time, submit to the Project Manager/Engineer a written proposal which in the Contractor’s opinion will reduce the cost of constructing, maintaining or operating the works, or improve the efficiency or value to the Employer of the completed Works or otherwise be of benefit to the Employer. Any such proposal shall be prepared at the cost of the Contractor. However Employer is not bound to accept such proposal.”

Sub-Clause 33.1 Terms of Payment

The text of Sub-Clause 33.1 is deleted and substituted by the following:

“The EPC/Turnkey and O&M Contract shall be payable for the following items:

- i. **Ten percent (10%)** of Contract Price shall be paid as advance payment against the Bank Guarantee for advance payment. (It will adjusted in the subsequent payments.)
- ii. **Fifty(50%)** on satisfactory post-shipment inspection report by consultancy firm and delivery of goods at site
- iii. **Forty Five (45%)** on successful testing & commissioning report by consultancy firm and also on the submission of Taken over Certificate (TOC) by the concerned offices.

- iv. **Five (5%)** on successful installation of Net metering connection in all the nine Commissioner offices.

Note: Ten Percent (10%) amount shall be kept as retention money against all payments. However, Contractor will be entitled for payments of the retention money against the bank guarantee

Secured Advance

(Employer may opt either “Secured Advance on Materials” if applicable shall be given after the Contractor has provided indemnity bond for secured advance as per standard format.

Advance Payment Security

The Contractor will submit advance payment security for all advance payments in the form of Bank Guarantee issued by a Scheduled Bank of Pakistan or from a bank located outside Pakistan duly counter-guaranteed by a Scheduled Bank in Pakistan in favor of the Employer valid for a period twenty eight (28) days beyond issue of taking over certificate.”

The following new Sub-Clauses 33.1.1 to 33.1.5 are added:

Sub-Clause 33.1.1 Retention of Payment

“If at any time any payment would fall due for Works or part of Works and, if there shall be any defect in part of such Works in respect of which such payment is proposed, the Employer may retain the whole or any part of such payment. Any sum retained by the Employer pursuant to the provisions of this Clause shall be paid to the Contractor after the said defect is removed.”

Sub-Clause 33.1.2 Payment Where Taking-Over Certificate Issued for Section or Part of Works

“If any section or part of the Works shall be taken-over separately under Clause 29 (Taking-Over) hereof, the payments herein provided for on or after Taking-Over shall be made in respect of the section or part taken-over and reference to the price shall mean such part of the price as shall, in the absence of agreement, be apportioned thereto by the Project Manager/Engineer.”

Sub-Clause 33.1.3 Extra Payment

No extra payment in respect of overtime, additional materials, or special conditions or hardship shall be claimed by the Contractor unless otherwise provided in the Contract or such payments have been previously authorized in writing by the Project Manager/Engineer or the Employer.

Sub-Clause 33.1.4 Breakdown of Lump Sum Items

For the purposes of statements to be submitted in accordance with Sub-Clause 33.1

hereof, the Contractor shall submit to the Project Manager/Engineer, within twenty eight (28) days after the receipt of the Letter of Acceptance, a breakdown for each of the lump sum items contained in the Bid. Such breakdowns shall be subject to the approval of the Project Manager/Engineer.”

Sub-Clause 33.2 Method of Application

The following paragraphs are added:

“The Contractor shall submit to the Employer/Project Manager/Engineer six (6) copies of the Application for Certificate of Payment (invoices) each signed by the Contractor and in such form as the Employer/Project Manager/Engineer may from time to time prescribe.

The Employer/Project Manager/Engineer shall examine such invoices within the times stated in Sub-Clauses 33.3 and 33.5. After such time each invoice will be deemed to have been accepted. If the invoice amount is not accepted by the Employer/Project Manager/Engineer, the disputed amount which is retained, shall be communicated, giving the reasons in writing, to the Contractor within the same time. If the objections of the Employer/Project Manager/Engineer are not acceptable to the Contractor he will justify his claims with necessary documentation and include left over amounts / items in the next invoice. However, the portions of such invoices accepted by the Employer/Project Manager/Engineer shall be paid as per Sub-Clause 33.5.”

Sub-Clause 33.5 Payment

The text of Sub-Clause 33.5 is deleted and substituted by the following:

“The amount due to the Contractor under any Interim Payment Certificate issued by the Project Manager/Engineer pursuant to this Clause, or to any other term of the Contract, shall, subject to Clause 27, be paid by the Employer to the Contractor within thirty (30) days after such Interim Payment Certificate has been jointly verified by Employer and Contractor, or, in the case of the Final Certificate (referred to in Sub-Clause 33.10) within sixty (60) days after such Final Payment Certificate has been jointly verified by Employer and Contractor; Provided that the Interim Payment shall be caused in thirty (30) days and Final Payment in forty two (42) days in case of foreign funded project.

Deduction shall be made from the net amounts payable to the Contractor of any sum(s) in accordance with the prevalent Federal and/or Provincial laws, provided that no such deduction shall be made from those payments in respect of which the Contractor has obtained exemption under the Law.”

Sub-Clause 33.6 Delayed Payment

The text of Sub-Clause 33.6 is deleted.

Sub-Clause 33.8 Payment by Measurement

The work shall be measured for the units mentioned in the Schedule of Prices according to the Contract as determined by the Project Manager/Engineer from approved drawings, Specifications and Contract Documents.

Sub-Clause 33.11 Issue of Final Certificate of Payment

The following paragraph is added at the end:

“The final certificate of payment is also subject to the production of “As-Built Drawings” by the Contractor as per Sub-Clause 6.10 of particular Conditions of Contract.

The following Sub-Clauses 33.12 and 33.13 are added:

Sub-Clause 33.12 Withholding of Payment

If the Works or any parts thereof are not being carried out to the Project Manager/Engineer's satisfaction and in order to protect the Employer from loss on account of:

- (a) defective work not rectified
- (b) guarantees not met
- (c) claims filed against the Contractor
- (d) failure of the Contractor to make payments due for Plant procured or labour employed by him
- (e) damage to any other contractor employed by the Employer
- (f) Contractor's non-compliance with the Contract
- (g) any Government dues recoverable from the Contractor if notified by the Government

The Project Manager/Engineer may notify withholding of such payments or part thereof as may, in his opinion, be related to the aforesaid reasons/grounds. When the reasons/grounds for withholding the payment are removed by the Contractor, the Project Manager/Engineer shall upon being satisfied to that effect issue Certificate of Payment in respect of withheld amounts.

Sub-Clause 33.13 Payment Schedule

Within thirty (30) days after receipt of the Letter of Acceptance, the Contractor shall submit a proposed payment schedule indicating the estimated payment throughout the currency of the Contract. This schedule shall be in a format satisfactory to the Employer and the Project Manager/Engineer, shall be consistent with the Program of Works, the advance, progress and final payment provisions included herein, and shall be in sufficient detail to permit preparation of cash flow projections for use by the Employer.”

Sub-Clause 35.2 Currency Restrictions

The text of Sub-Clause 35.2 is deleted and substituted by the following:

“Any required foreign currency transactions shall be met by the Contractor at his cost from his own resources.”

Sub-Clause 35.3 Rates of Exchange

The text of Sub-Clause 35.3 is deleted and substituted by the following:

“Any import, if required and approved by the Employer shall also be paid in local currency with exchange rate for the period as notified by the State Bank of Pakistan [*The Employer may change it*].”

Sub-Clause 36.4 Payment Against Provisional Sums

The text of Sub-Clause 36.4 is deleted and substituted by the following:

“Provisional Sums, if any will be expended on the direction of the Project Manager/Engineer through Variation Orders which would be valued in accordance with the provisions of Clause 31 Conditions of Contract.”

Sub-Clause 37.2 Employer's Risks

The text of Sub-Clause 37.2 is deleted and substituted by the following:

“The Employer's Risks are:

- (a) (Insofar as they relate to Pakistan) war and hostilities (whether war be declared or not), invasion, act of foreign enemies;
- (b) (Insofar as they relate to Pakistan) rebellion, revolution, insurrection, military or usurped power or civil war;
- (c) ionizing radiation or contamination by radioactivity from any nuclear fuel, radioactive toxic explosives or other hazardous properties of any explosive nuclear assembly or nuclear components thereof;
- (d) pressure waves caused by aircraft travelling at sonic or supersonic speed;
- (e) (Insofar as they relate to Pakistan) riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Subcontractors.
- (f) use or occupation of the Work or any part thereof by the Employer;
- (g) fault, error, defect or omission in the design of any part of the Works by the Project Manager/Engineer, Employer or those for whom the Employer is responsible for which the Contractor has disclaimed responsibility in writing within a reasonable time after the receipt of such design;
- (h) the use or occupation of the Site by the Works or any part thereof, or for the purposes of the Contract: or interference, whether temporary or permanent with any right of way, light, air or water or with any easement, wayleaves or right of a similar nature which is the inevitable result of the construction of the Works in accordance with the Contract;
- (i) the right of the Employer to construct the Works or any part thereof on, over, under, in or through any land;

- (j) damage (other than that resulting from the Contractor's method of construction) which is the inevitable result of the construction of the Works in accordance with the Contract; and
- (k) the act, neglect or omission or breach of contract or of statutory duty of the Project Manager/Engineer, the Employer or other contractors engaged by the Employer or of their respective employees or agents.”

Sub-Clause 39.2 Loss or Damage Before Risk Transfer Date

The words “by arbitration under Clause 50” are deleted and substituted “by the Project Manager/Engineer”.

The following new Sub-Clause 39.4 is added:

“Sub-Clause 39.4 Duty to Minimize Delay

Each Party shall at all times use all reasonable endeavors to minimize any delay in the Performance of the Contract as a result of Risks.

The Contractor shall give notice to the Employer and vice versa the Employer shall give notice to the Contractor in case of foreseeable delay by the Risks.”

Sub-Clause 40.2 Employer's Liability

The text of Sub-Clause 40.2 from the words “death or personal injury” to the end of the Sub-Clause, is deleted and substituted by the following:

“..... (other than the Works) or of death or personal injury to the extent caused by those of the Employer's Risks listed in paragraphs (f), (g), (h), (i), (j), and (k) of Sub-Clause 37.2 but not otherwise.”

Sub-Clause 42.2 Maximum Liability

The words “the sum stated in the Preamble to Conditions of Contract or if no such sum is stated” appearing in 2nd line of Sub-Clause are deleted.

Sub-Clause 42.6 Foreseen Damages

Sub-Clause 42.6 is deleted in its entirety.

Sub-Clause 43.1(a) The Works (Insurance)

The other risks to be insured are:

- (i) Fire, smokes, explosion, falling objects, earthquake, perils of the sea, tempest, impact by aircraft or land vehicle, aircraft and other aerial devices or articles dropped therefrom, lightning, strike, riot, civil commotion, escape of water, inundation, rain, snow, land slides, flood, act of God, vandalism or malicious

damage, windstorm or hail storm.

- (ii) Collision, upset, overturn, derailment, stranding or sinking of an automobile or any conveyance of a common carrier by land, water or air in which the Plant or any part thereof is being carried including overland transportation in Pakistan from port of entry to the Site.
- (iii) Theft, burglary or attempted theft or burglary.
- (iv) Any loss or damage during pre-erection storage.
- (v) Faults in construction and erection, lack of skill, lack of experience, negligence, malicious act.
- (vi) any other sudden and unforeseen event such as loss or damage due to collapse etc. on site, transport of items to be erected.
- (vii) Actions of the Employer in the operation of plant or part thereof on behalf of the Contractor.

The following further Sub-Clauses are 43.1.1, 43.1.2 and 43.1.3 are added:

Sub-Clause 43.1.1 Marine Insurance of Plant

- (1) The Contractor shall in the joint names of the Contractor and the Employer, obtain Marine Cargo All Risks Insurance to cover loss or damage to the Plant or part thereof during transport.
- (2) The insurance for each consignment of Plant or part thereof shall attach from the time the Plant or part thereof leave the warehouse or place of storage and terminate after ninety (90) days on its completion of unloading at the Site or until insurance survey whichever occurs first. Upon arrival of each consignment at the Site, the Contractor shall, immediately arrange insurance survey by the insurance company.
- (3) The sum insured for imported Plant or part thereof shall be for its full replacement value at the Site i.e. 100 % CIF value at the Site for each consignment of the Plant or part thereof plus not less than 30 % of CIF value at the Site to cover any additional costs resulting from loss or damage thereof.
- (4) The Insurance Policy for imported Plant etc. shall be on "All Risks" basis and shall not be limited to the attachment/endorsement of following clauses:
 - (a) Institute Cargo Clauses (A)
 - (b) Institute War Clauses (Cargo)
 - (c) Institute Strikes Clauses (Cargo)

- (d) Institute Cargo Clauses (Air) excluding sending by Post
- (e) Institute War Clauses (Air Cargo) excluding sending by Post.
- (f) Institute Strikes Clauses (Air Cargo)
- (g) Special Replacement Clauses (Air)
- (h) Institute Theft, Pilferage and Non-delivery Clauses

Sub-Clause 43.1.2 Erection/Construction All Risks Insurance

- (1) The Contractor shall insure the Works or part thereof in the joint names of the Contractor and the Employer.
 - (a) from the date following the completion of the first unloading at the Site of the Plant or part thereof and other materials (to be used for construction or erection) and from commencement of Works at Site until the Risk Transfer Date against any loss or damage caused by any of the Contractor's risks and any other risks specified in Sub-Clause 43.1.(a) above and
 - (b) during the Defects Liability Period against any loss or damage which is caused either:
 - (i) by the Contractor in completing any outstanding work or complying with his obligations under Clause 30, or
 - (ii) by any of the Contractor's risks and any other risks specified in Sub-Clause 43.1(a) above, which occurred prior to the Risk Transfer Date.
- (2) The sum insured shall be the full replacement value at the Site, which includes:
 - (a) (i) FOB value of imported Plant to be erected
 - (ii) Ex-factory value of Indigenous Plant to be erected, if any
 - (b) freight and insurance including local transport
 - (c) customs duties and taxes etc.
 - (d) cost of erection
 - (e) cost of civil engineering work including escalation
 - (f) clearance of debris, maximum @ 5 % of minimum amount of Third Party Liability Insurance

Plus 30% to cover any additional costs resulting from loss or damage thereof.

Sub-Clause 43.1.3 General

Should a loss be sustained, the Contractor shall replace or repair any loss or damage at his own cost and complete the Works in accordance with the Contract as soon as possible after occurrence of such loss or damages, without waiting for the settlement of the insurance claim.”

Sub-Clause 43.2 Contractor's Equipment

The text of Sub-Clause 43.2 is deleted and substituted by the following:

“The Contractor shall insure the Contractor's Equipment for its full replacement value while on the Site against all loss or damage caused by any of the Contractor's Risks.”

Sub-Clause 43.7 Remedies on the Contractor’s Failure to Insure

In 3rd line after the word, “purpose”, the expression “and reasonable costs including the man-hours costs of Employer’s Personnel” is added.

The following new Sub-Clauses 43.9 to 43.12 are added:

Sub-Clause 43.9 Currency of Insurance

All policies of Insurance of the Plant shall provide for payment of indemnity to be made in such amounts as will allow making good of loss of or damage to the whole or any part of the Works.

Sub-Clause 43.10 Contractor to Notify

It shall be the responsibility of the Contractor to notify the insurance company of any changes in nature and extent of the Works and to ensure the adequacy of the insurance coverage at all times in accordance with the provisions of the Contract.

Sub-Clause 43.11 Procurement of Insurance Policies

The Contractor shall procure and submit the insurance cover under this Clause within a period of twenty eight (28) days from the date of receipt of Letter of Acceptance from the Employer.

Sub-Clause 43.12 Insurance Company

The policies of marine insurance and all other insurances with respect to Contractor’s operations in Pakistan shall be effected with any of the insurance company acceptable to the Employer operating in Pakistan with financial strength rating of AA approved by Pakistan Credit Rating Agency (PACRA) or JCR including National Insurance Corporation (NIC) of Pakistan.”

Sub-Clause 44.6 Damage Caused by Force Majeure

At the end of the Sub-Clause 44.6 the following is added:

“However the Contractor shall put up his claim to the Employer / Project Manager/Engineer with full details and justification.”

Sub-Clause 44.8 Payment on Termination for Force Majeure

Text in sub-Para (c) is deleted and Paras (d) and (e) are re-numbered as (c) and (d).

Sub-Clause 44.10 Force Majeure Affecting Project Manager/Engineer’s Duties

Sub-Clause 44.10 is deleted in its entirety.

Sub-Clause 45.2 Contractor's Default

The following paragraph is added at the end of Sub-Clause 45.2.

“The Employer or such other contractor may use for such completion any Contractor's Equipment which is upon the Site as he or they may think proper, and the Employer shall pay the Contractor a reasonable compensation for such use”.

Sub-Clause 45.4 Payment after Termination

The text of Sub-Clause 45.4 is deleted and substituted by the following:

“The Employer shall not be liable to make any further payments to the Contractor until the Works have been completed. When the Works are so complete, the Project Manager/Engineer shall certify the total cost of such completion of Works.

The Employer may recover the extra cost of such completion, as certified by the Project Manager/Engineer, from any sums otherwise due and payable to the Contractor and/or by disposing of the Contractor's Equipment and stores taken over by the Employer under this Clause or as otherwise provided by law. If there is no such extra cost the Employer shall pay any balance due to the Contractor.”

The following new Sub-Clause 45.6 is added:

Sub-Clause 45.6 Integrity Pact

If the Contractor, or any of his Subcontractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Schedule-J to his Bid, then the Employer shall be entitled to:

- (a) recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder’s fee or kickback given by the Contractor or any of his Subcontractors, agents or servants;
- (b) terminate the Contract; and
- (c) recover from the Contractor any loss or damage to the Employer as a result of such termination or of any other corrupt business practices of the Contractor or any of his Subcontractors, agents or servants.

The termination under Sub-Para (b) of this Sub-Clause shall proceed in the manner prescribed under Sub-Clauses 45.2 to 45.5 and the payment under Sub-Clause 45.4 shall be made after having deducted the amounts due to the Employer under Sub-Paras (a) and (c) of this Sub-Clause.

Sub-Clause 46.1 Employer's Default

The comma and the word “or” at the end of paragraph (d) of Sub-Clause 46.1 are deleted and substituted by period (.) Paragraph (e) of Sub-Clause 46.1 is deleted.

Sub-Clause 46.3 Payment on Termination for Employer's Default

The words “including loss of profit” in the second paragraph of Sub-Clause 46.3 are deleted.

Sub-Clause 47.1 Labour, Materials and Transport

(The user may extract the formula:

- i. _____ from Clause 70.1
of PCC of PEC Civil Works Bidding Documents.
- ii. _____ with reference to
PEC Documents “Standard Guidelines and Formula for Price Adjustment”.
- iii. _____ from Clause 15.2
of GCC of PEC Bidding Documents for Supply of Goods and Services.)

Sub-Clause 48.1 Local Taxation-Custom and Import Duties

The rates and prices quoted by the Contractor in the Schedule of Prices shall be deemed to have included (i) business taxes, income tax, super tax, customs, import duties and other taxes on income, and (ii) fees charged for services provided under this Contract. The taxation is leviable as per income tax ordinance 2001 issued by FBR Government of Pakistan including adjustment in prices as per clause 47.

The following Sub-Clause 48.3 is added:

Sub-Clause 48.3 Port Charges and Port Congestion

“The Contractor shall be deemed to have obtained all the information regarding facilities and
charges, in respect of port clearance, loading and unloading, storage, transportation, congestion and confirmed the requirements thereof at his own responsibility and all such costs and charges are deemed to be included in the rates and prices of the Schedule of Prices.”

Sub-Clause 49.1 Notices to Contractor

The following paragraph is added at the end of Sub-Clause 49.1:

“For the purposes of Sub-Clause 49.1, the Contractor shall, immediately after receipt of Letter of Acceptance, intimate in writing to the Employer and the Project Manager/Engineer by registered post, the address of his principal place of business or any change in such address during the period of the Contract.”

Sub-Clause 50 Disputes & Arbitration

Clause 50 is deleted and in its place the following Sub-Clauses 50.1 to 50.5 are inserted:

“50.1 If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with, or arising out of, the Contract or the execution of the Works, whether during the execution of the Works or after their completion and whether before or after repudiation or other termination of the Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Project Manager/Engineer, the matter in dispute shall, in the first place, be referred in writing to the Project Manager/Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the fifty sixth (56) day after the day on which he received such reference, the Project Manager/Engineer shall give notice of his decision to the Employer and the Contractor. Such decision shall state that it is made pursuant to this Clause.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the Work with all due diligence, and the Contractor and the Employer shall give effect forthwith to every such decision of the Project Manager/Engineer unless and until the same shall be revised, as hereinafter provided in an amicable settlement or in an arbitral award.

In any case where the Conditions of Contract provide that the decision of the Project Manager/Engineer is to be final and conclusive, such decision shall not be referable to arbitration under this Clause nor shall the same be questioned in any other form of proceedings whatsoever.

50.2 If either the Employer or the Contractor be dissatisfied with a decision of the Project Manager/Engineer or if the Project Manager/Engineer fails to give notice of his decision on or before the fifty sixth (56) day after the day on which he received the reference, then either the Employer or the Contractor may, on or before the twenty eighth (28) day after the day on which the said period of fifty six (56) days expired, as the case may be, give notice to the other party to commence arbitration, as hereinafter provided, as to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as hereinafter provided, as to such dispute and, subject to Sub-Clause 50.5, no arbitration in respect thereof may be commenced unless such notice is given.

If the Project Manager/Engineer has given notice of his decision as to a matter in dispute to the Employer and the Contractor and no notification of intention to commence arbitration as to such dispute has been given by either the Employer or the Contractor on or before the twenty eighth (28) day after the day on which the parties received notice as to such decision from the Project Manager/Engineer the said decision shall become final and binding upon the Employer and the

Contractor.

50.3 Where notice of intention to commence arbitration as to a dispute has been given in accordance with Sub-Clause 50.2, arbitration of such dispute shall not be commenced unless an attempt has first been made by the parties to settle such dispute amicably through mutual negotiation within ninety (90) days from the date of notification of Project Manager/Engineer's decision.

50.4 Any dispute in respect of which:

- (a) the decision, if any, of the Project Manager/Engineer has not become final and binding pursuant to Sub-Clause 50.1 and
- (b) amicable settlement has not been started/reached within the period stated in Sub-Clause 50.3

shall be finally settled, unless otherwise specified in the Contract, under the Rules of Pakistan Arbitration Act, 1940 (Act No. X of 1940) and Rules made thereunder as amended, by one or more arbitrators appointed under such Rules.

The said arbitrator(s) shall have full power to open up, review and revise any decision, opinion, instruction, determination, certificate or valuation of the Project Manager/Engineer for the purpose of obtaining said decision pursuant to Sub-Clause 50.1. No such decision shall disqualify the Project Manager/Engineer from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.

The venue of arbitration proceedings shall be the place in Pakistan as mentioned in the Preamble to Conditions of Contract.

50.5 Where neither the Employer nor the Contractor has given notice of intention to commence arbitration of a dispute within the period stated in Sub-Clause 50.1 or 50.2 and the related decision has become final and binding, either party may, if the other party fails to comply with such decision, and without prejudice to any other rights it may have, refer the failure to arbitration in accordance with Sub-Clause 50.4. The provisions of Sub-Clauses 50.1 to 50.2 shall not apply to any such reference."

Additional Conditions

52. Liens

Each contractor, for himself and for any persons directly or indirectly responsible to him, and for his or their material, equipment and employees, and for all other persons performing any labor or furnishing any labor or material for any/or all of the Work covered by his Contract, will be required to release or waive, to the full extent permitted by law, all mechanical and other liens, for or on account of the Work done or equipment and material furnished hereunder and the improvements or structures herein same may be incorporated, and the land to which they are appurtenant shall at all times be free and clear of all such liens.

53.1 Payment of Income Tax, Etc.

The Contractor shall be responsible for the payment, if any is required, of all Pakistani Income Tax, Super Tax, and other taxes on income arising out of the Contract, and the rates and prices stated in the priced Schedule of Prices shall be deemed to cover all such taxes.

53.2 Personnel, Taxes and Duties

The Contractor or his personnel shall pay all personal income tax or other taxes due in Pakistan, if any, for the personnel employed by the Contractor for implementing the work or any other activity required by the Contract. The Contractor shall obtain, at his own cost, work permits from competent authorities to enable any foreign personnel to work in Pakistan. The Contractor shall be responsible for all formalities in connection with passports, obtaining visas, police permits, and expenses for customs duties, if any, related to personal goods of foreign personnel employed on the Project. However, the Employer will, if requested, assist the Contractor in obtaining visas and work permits.

53.3 Income Taxes Provisions in Subcontracts

Provisions to the like effect as those contained in this Clause shall be incorporated in Subcontracts.

54. Liability of the Contractor

The Contractor or his Subcontractors or assigns shall follow strictly, all relevant labour laws including the Workmen's Compensation Act and the Employer shall be fully indemnified for all claims, damages etc. arising out of any dispute between the Contractor, his Subcontractors or permitted assigns and the labour employed by them.

55. Joint and Several Liability

If the Contractor is a joint venture of two or more persons, all such persons shall be jointly and severally bound to the Employer for the fulfilment of the terms of the Contract and shall designate one of such persons to act as leader with authority to bind the joint venture. The composition or the constitution of the joint venture shall not be altered without the prior consent of the Employer.

56. Details to be Confidential

The Contractor shall treat the details of the Contract as private and confidential, save in so far as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Employer or the Project Manager/Engineer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract, the same shall be referred to the decision of the Project Manager/Engineer whose award shall be final.

STANDARD FORMS

STANDARD FORMS

Standard Forms include the following:

- Form of Bid Security
(Bank Guarantee)
- Form of Contract Agreement
- Form of Performance Security
(Bank Guarantee/ Insurance Bond)
- Form of Bank Guarantee for Advance Payment
- Indemnity Bond For Secured Advance

FORM OF BID SECURITY
(Bank Guarantee)

Guarantee No. _____
Executed on _____
Expiry date _____

Name of Guarantor (Bank) with address:

Name of Principal (Bidder) with address:

Penal Sum of Security (express in words and figures): _____

Bid Reference No. _____ Date of Bid
Opening _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal, we the Guarantor above-named are held and firmly bound unto the _____, (hereinafter called the "Employer") in the sum stated above, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying Bid numbered dated as above for _____ (Particulars of Bid) to the said Employer; and

WHEREAS, the Employer has required as a condition for considering the said Bid that the Principal furnishes a Bid Security in the above said sum to the Employer, conditioned as under:

- (1) that the Bid Security shall remain valid for a period 28 days beyond the period of validity of the Bid,
- (2) that in the event of;
 - (a) the Principal withdraws his Bid during the period of validity of Bid, or
 - (b) the Principal does not accept the correction of his Bid Price, pursuant to Sub-Clause 24.2 of Instructions to Bidders, or

- (c) failure of the successful Bidder to
 - (i) furnish the required Performance Security, in accordance with Clause 34 of Instructions to Bidders, or
 - (ii) sign the proposed Contract Agreement, in accordance with Clause 35 of Instructions to Bidders,

then the entire sum be paid immediately to the said Employer as liquidated damages and not as penalty for the successful Bidder's failure to perform.

NOW THEREFORE, if the successful Bidder shall, within the period specified therefor, on the prescribed form presented to him for signature enter into a formal Contract with the said Employer in accordance with his Bid as accepted and furnish within twenty eight (28) days of his being requested to do so, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said Employer for the faithful performance and proper fulfilment of the said Contract or in the event of non-withdrawal of the said Bid within the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT the Guarantor shall forthwith pay to the Employer the said sum stated above upon first written demand of the Employer without cavil or argument and without requiring the Employer to prove or to show grounds or reasons for such demand notice of which shall be sent by the Employer by registered post duly addressed to the Guarantor at its address given above.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Guarantor shall pay without objection the sum stated above upon first written demand from the Employer forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above bounden Guarantor has executed the instrument under its seal on the date indicated above, the name and seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.

Guarantor (Bank)

Witness:

Signature _____

1. _____

Name _____

Corporate Secretary (Seal)

Title _____

2. _____

(Name, Title & Address)

Corporate Guarantor (Seal)

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the _____ day of _____ (month) 20____ between _____ (hereafter called the "Employer") of the one part and _____ (hereafter called the "Contractor") of the other part.

WHEREAS the Employer is desirous that certain Works, viz _____ should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

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 Conditions of Contract hereinafter referred to.
2. The following documents after incorporating addenda, if any except those parts relating to Instructions to Bidders shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) The Contract Agreement
 - (b) The Letter of Acceptance
 - (c) The completed Form of Bid
 - (d) The Preamble to Conditions of Contract
 - (e) The Particular Conditions of Contract
 - (f) The General Conditions of Contract
 - (g) The priced Schedule of Prices
 - (h) The completed Schedules to Bid (A to L)
 - (i) The Specifications
 - (j) The Drawings
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of the Contract, 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

on the day, month and year first before written in accordance with their respective laws.

Signature of the Contactor

(Seal)

Signature of Employer

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

(Name, Title and Address)

Witness:

(Name, title and Address)

FORM OF PERFORMANCE SECURITY
(Bank Guarantee/ Insurance Bond)

Guarantee No. _____

Executed on _____

Expiry date _____

Name of Guarantor (Bank/Approved Insurance Company) with
address: _____

Name of Principal (Contractor) with
address: _____

Penal Sum of Security (express in words and
figures) _____

Letter of Acceptance No. _____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held _____ and _____ firmly bound unto the _____ (hereinafter called the "Employer") in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Employer's above said Letter of Acceptance for _____ (Name of Contract) for the _____ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 30, Defects after Taking Over, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing

which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defences under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer's written declaration that the Principal has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above-bounden Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Insurance Co.)

Witness:

1. _____

Corporate Secretary (Seal)

2. _____

Name, Title & Address

Guarantor (Bank/Approved

Signature _____

Name _____

Title _____

Corporate Guarantor (Seal)

FORM OF BANK GUARANTEE FOR ADVANCE PAYMENT

Guarantee No. _____

Executed on _____

Expiry date _____

WHEREAS the _____ (hereinafter called the Employer) has entered into a Contract for _____

_____ (Particulars of Contract), with

_____ (hereinafter called the Contractor).

AND WHEREAS the Employer has agreed to advance to the Contractor, at the Contractor's request, an amount of _____ (Rs. _____) which amount shall be advanced to the Contractor as per provisions of the Contract.

AND WHEREAS the Employer has asked the Contractor to furnish Guarantee to secure advance payment for performance of his obligations under the said Contract.

AND WHEREAS _____ (Bank) (hereinafter called the Guarantor) at the request of the Contractor and in consideration of the Employer agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

NOW THEREFORE the Guarantor hereby guarantees that the Contractor shall use the advance for the purpose of above mentioned Contract and if he fails, and commits default in fulfillment of any of his obligations for which the advance payment is made, the Guarantor shall be liable to the Employer for payment not exceeding the aforementioned amount.

Notice in writing of any default, of which the Employer shall be the sole and final judge, as aforesaid, on the part of the Contractor, shall be given by the Employer to the Guarantor, and on such first written demand payment shall be made by the Guarantor of all sums then due under this Guarantee without any reference to the Contractor and without any objection.

This guarantee shall come into force as soon as the advance payment has been credited to the account of the Contractor.

This guarantee shall expire not later than _____ by which date we must have received any claims by registered letter, telegram, telex or telefax.

It is understood that you will return this Guarantee to us on expiry or after settlement of the total amount to be claimed hereunder.

Witness:

1. _____

Corporate Secretary (Seal)

2. _____

Name, Title & Address

Guarantor (Bank)

Signature _____

Name _____

Title _____

Corporate Guarantor (Seal)

**INDEMNITY BOND FOR SECURED ADVANCE
AGAINST MATERIALS BROUGHT AT SITE**

(ON RS.40 NONJUDICIAL STAMP PAPER)

This Deed of Indemnity is issued by M/s. _____
_____ (Name of the Contractor) in
favour of M/s. _____ (Name of the Employer).

Whereas _____ (hereinafter called the Employer) has
agreed to pay the Secured Advance against the cost of material through any Bank or like
agency by any other method by virtue of the terms of the contract existing between the
parties. The details of the material and their price for which secured advance is being
sought for the period _____ till consumption
of the material is as under :-

- | | | | |
|----------|--------------|-----------|-------------|
| 1. _____ | at Rs. _____ | per _____ | = Rs. _____ |
| 2. _____ | at Rs. _____ | per _____ | = Rs. _____ |
| 3. _____ | at Rs. _____ | per _____ | = Rs. _____ |
| 4. _____ | at Rs. _____ | per _____ | = Rs. _____ |

THEREFORE THIS DEED OF INDEMNITY WITNESSETH AS FOLLOWS:

I/We _____ of M/s. _____
do hereby indemnify M/s _____ for all losses due to thefts, arson, pilferage, loss due to flood and
material.

I/We _____ shall indemnify _____
against any or all claims, action damages arising out of or resulting to the said material.

I/We _____ further declare that we will faithfully abide by
the above declaration and solemnly affirm that we will not remove, sell, pilferage any of
the materials against which M/s _____ has paid us such a secured advance and will not
pledge the same with any Bank, Finance Corporation, Firm, Company, Individual or the
like agency or create any change whereon in any from what so ever.

I/We _____ do hereby also declare that in the event of
my/our infringement of the declaration made above _____ will be entitled to
forfeit all such material and also proceed against me/us according to the relevant clause
pertaining to breach of contract and further invoke the power or seek any remedies
secured of _____ under the contract Agreement signed with us or
otherwise available under law.

Place _____ Dated _____

Contractor _____

SPECIFICATIONS
SPECIAL PROVISIONS

SPECIFICATIONS
TECHNICAL PROVISIONS

Appendix-01

SPECIFICATIONS

TECHNICAL INFORMATION AND SPECIFICATION FOR SOLAR POWER GENERATION SYSTEM TO BE REQUIRED

a. SITE THECHICAL INFORMATION

The necessary technical information about the project site is discussed below. However any query about site information would be available on request within bidding time.





b. Site Introduction:

The suggested location for execution of Solar Based Power Project is at roof top buildings of the following Commissioner Complexes in Punjab.

1. Commissioner Complex, Multan.
2. Commissioner Complex, Dera Ghazi Khan.
3. Commissioner Complex, Bahawalpur.
4. Commissioner Complex, Sahiwal.
5. Commissioner Complex, Lahore.
6. Commissioner Complex, Gujranwala.
7. Commissioner Complex, Faisalabad.
8. Commissioner Complex, Sargodha.
9. Commissioner Complex, Rawalpindi.

1.1 Site Location:

The Commissioner Complexes in Punjab have been located at following below mentioned locations.

<p>1. Commissioner Complex, Multan. GPS Data 30°12'23.9"N 71°27'36.6"E</p> 	<p>2. Commissioner Complex, Dera Ghazi Khan GPS Data 30°03'06.2"N 70°37'53.3"E</p> 
<p>3. Commissioner Complex, Bahawalpur. GPS Data: 29°23'32.3"N 71°41'29.3"E</p> 	<p>4. Commissioner Complex, Sahiwal. GPS Data: 30°40'01.6"N 73°05'44.1"E</p> 

5. Commissioner Complex, Lahore.
GPS Data: 31°34'09.7"N 74°18'05.4"E



6. Commissioner Complex, Gujranwala
GPS Data: 32°10'28.7"N 74°11'42.1"E



7. Commissioner Complex, Faisalabad.
GPS Data: 31°25'50.3"N 73°05'18.2"E



8. Commissioner Complex, Sargodha.
GPS Data: 32°04'19.4"N 72°40'21.6"E



9. Commissioner Complex, Rawalpindi.
GPS Data: 33°35'04"N 73°04'01"E

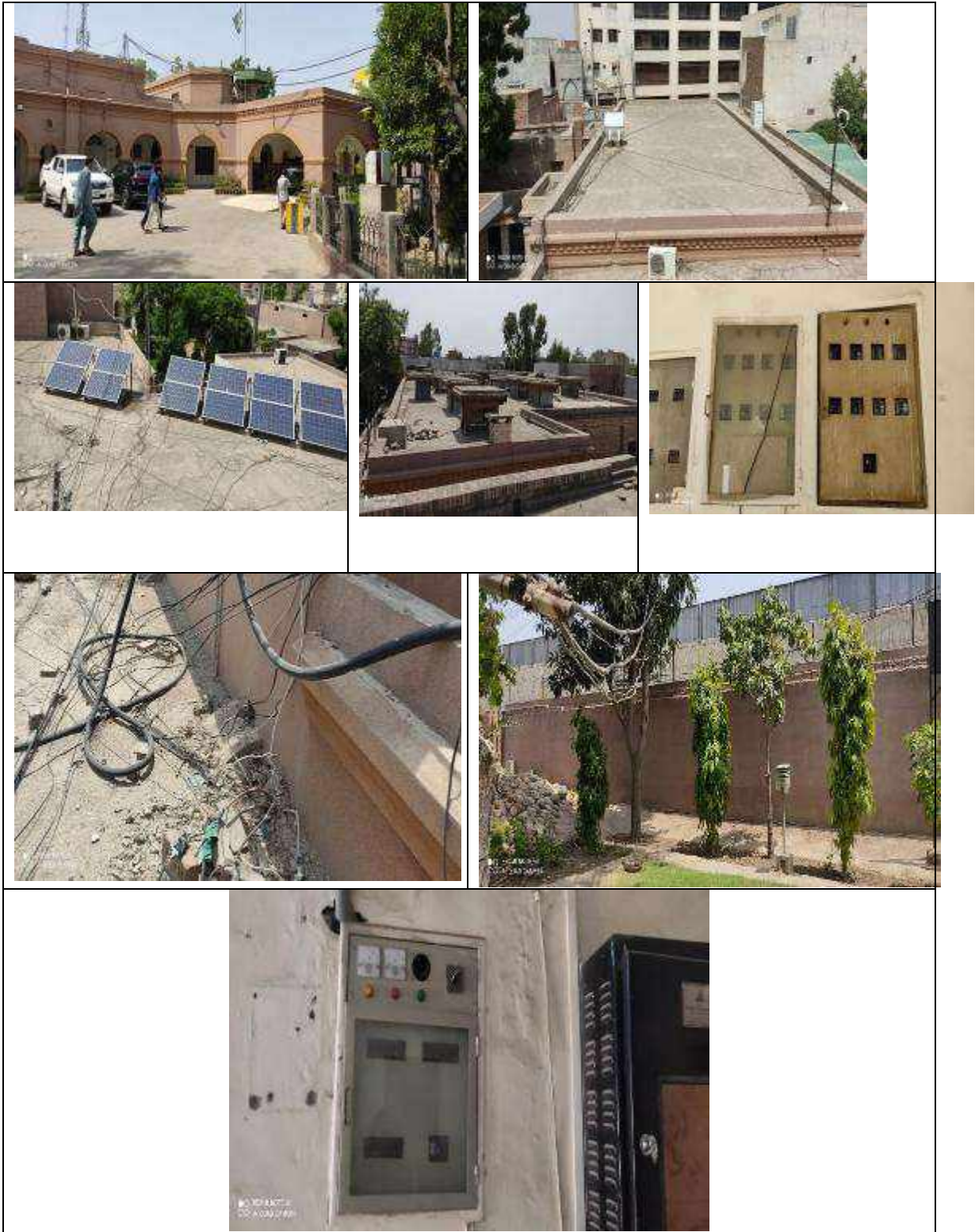


1.2 Site Description:

Currently the Solar Power Plant have been planned to install at nine (09) different locations in Punjab. The necessary pictorial view in this regards is as under:-

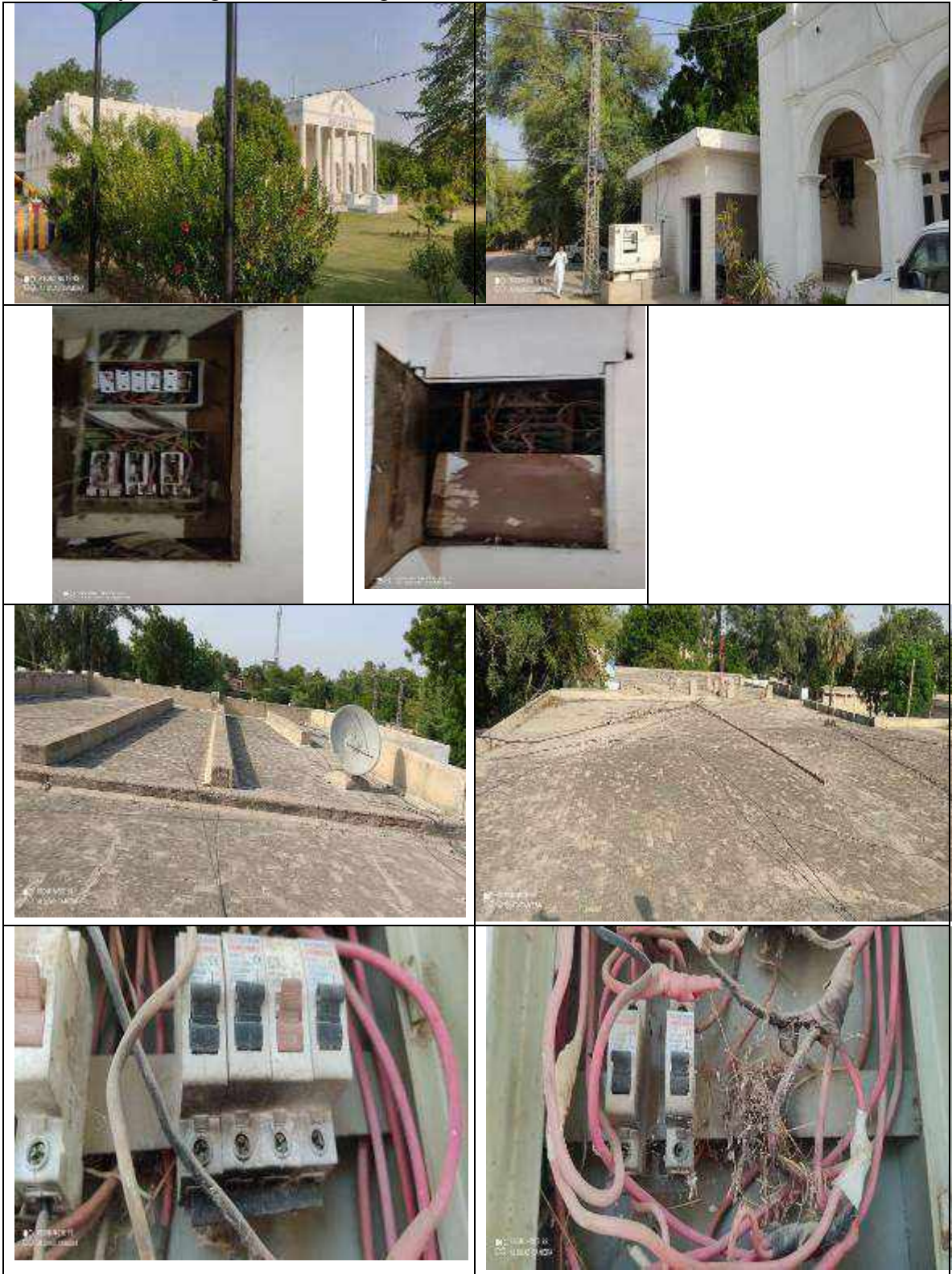
1.2.1 Commissioner Complex, Multan.

The Building of Commissioner Complex, Multan comprising of Three single story buildings and one three Story Building.



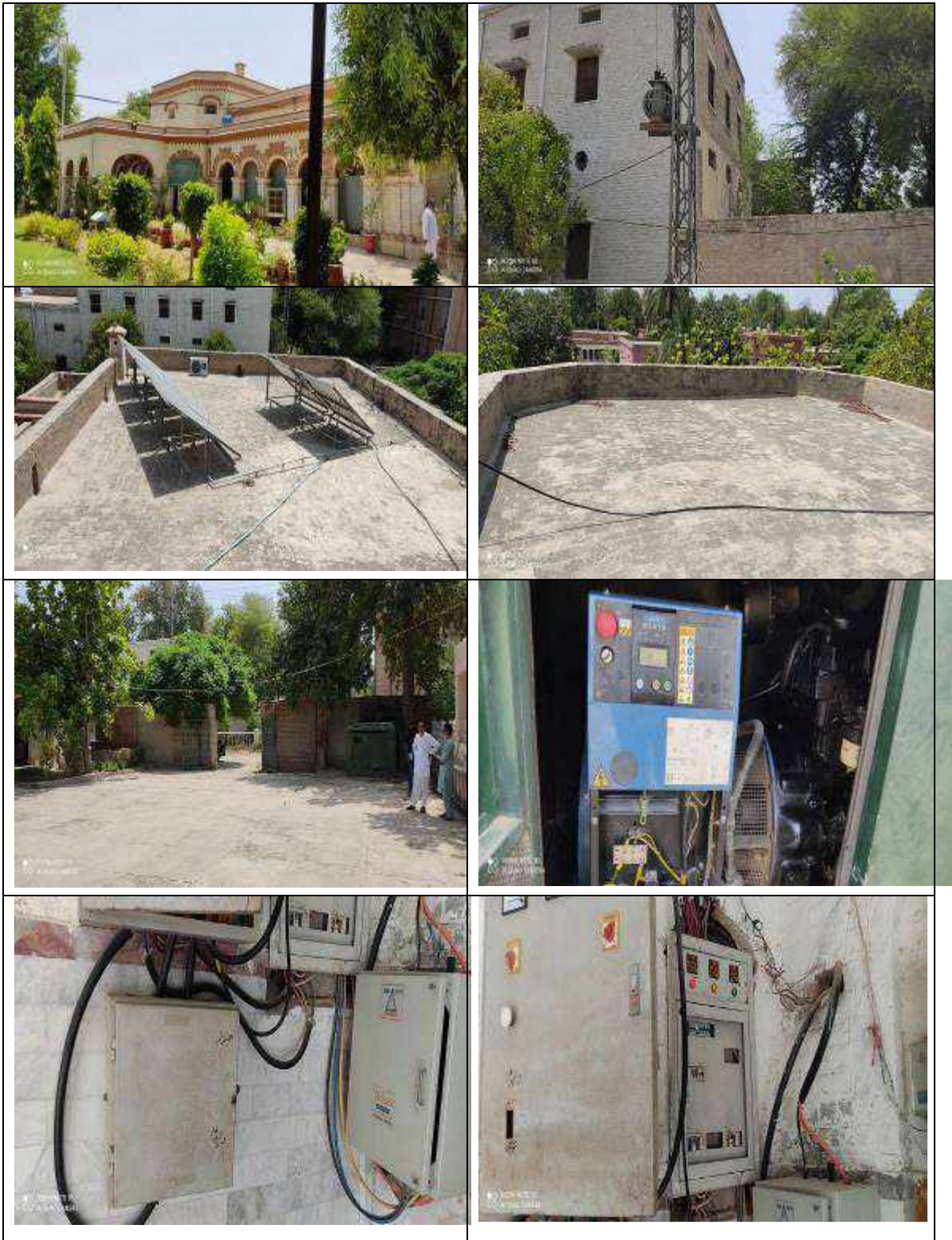
1.2.2 Commissioner Complex, DG Khan.

The Building of Commissioner Complex, Multan comprising of Three single story buildings with following information.



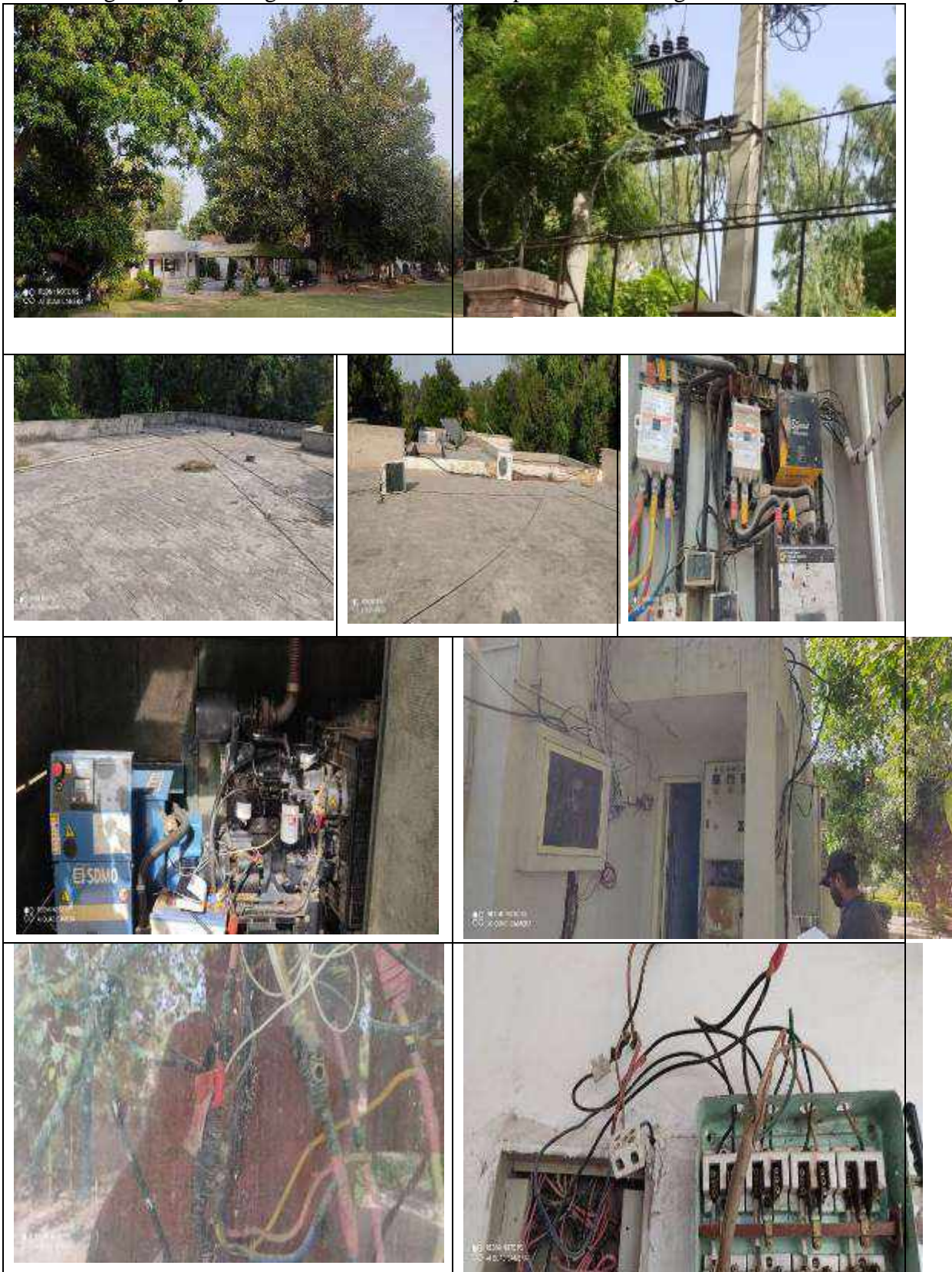
1.2.3 Commissioner Complex, Bahawalpur.

The Building of Commissioner Complex, Bahawalpur comprising of One single story building with three set of roof tops with following information.



1.2.4 Commissioner Complex, Sahiwal.

The Building of Commissioner Complex, Sahiwal comprising of two separate single story buildings with five set of roof tops with following information.



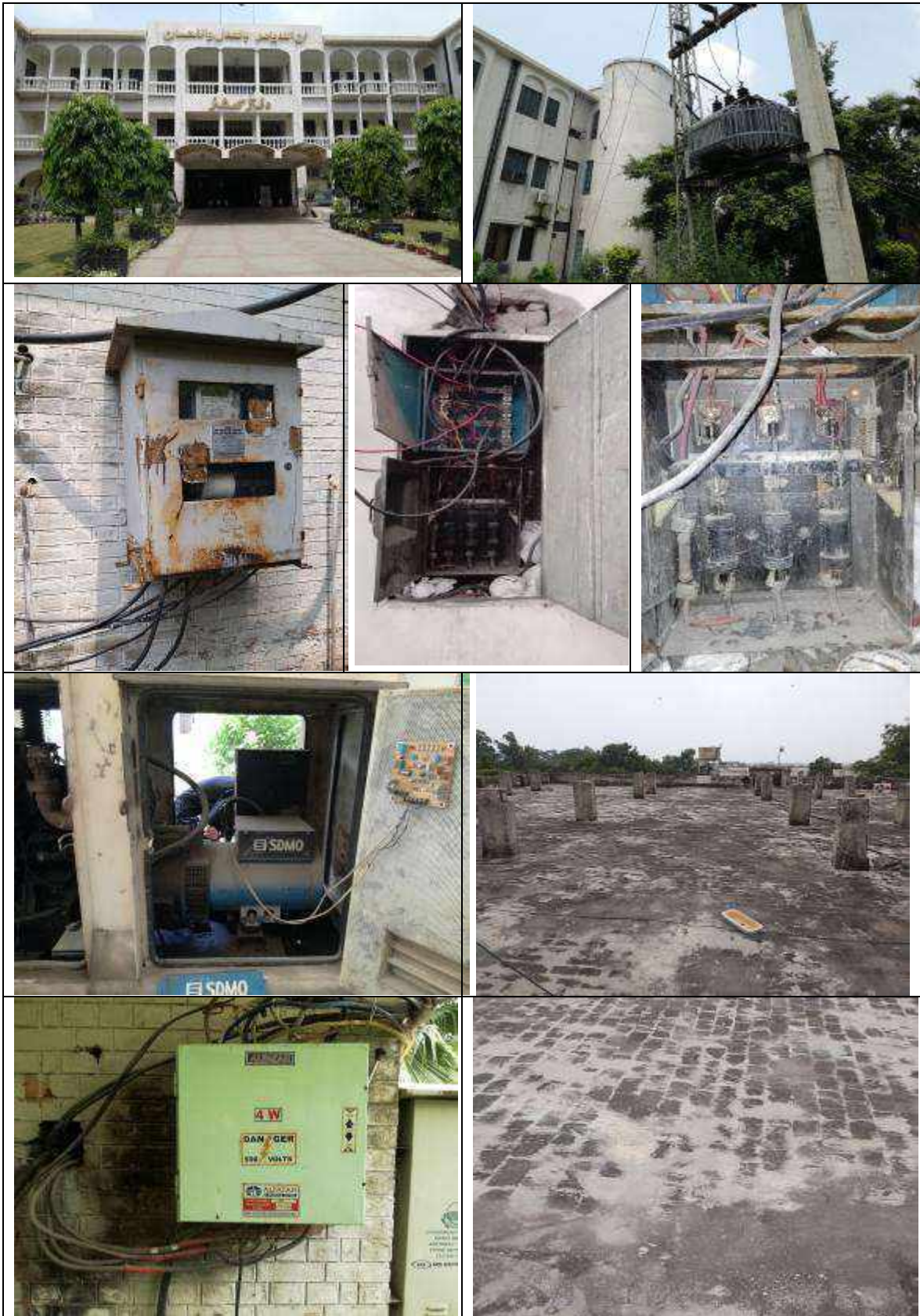
1.2.5 Commissioner Complex, Lahore.

The Building of Commissioner Complex, Lahore comprising of one separate single story buildings with following information.



1.2.6 Commissioner Complex, Gujranwala.

The Building of Commissioner Complex, Gujranwala comprising of single separate Triple story building with two portions with respect to power distribution with following information.



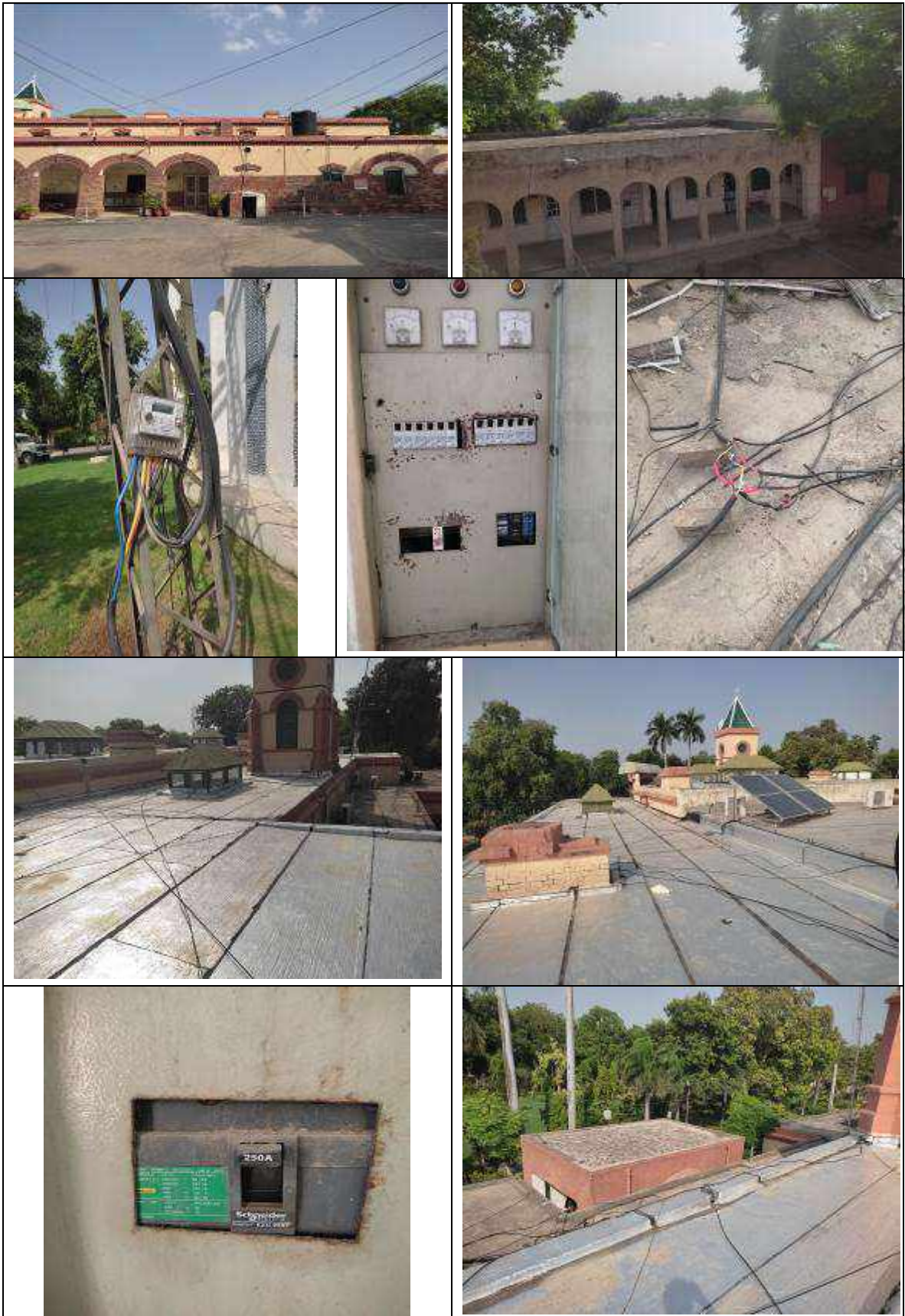
1.2.7 Commissioner Complex, Faisalabad.

The Building of Commissioner Complex, Faisalabad comprising of single triple story building with following information.



1.2.8 Commissioner Complex, Sargodha.

The Building of Commissioner Complex, Sargodha comprising of one single story buildings with following information.



1.2.9 Commissioner Complex, Rawalpindi.

The Building of Commissioner Complex, Rawalpindi comprising of two single story buildings and one Three story Buildings with following information.



1.3 Summarized overview

Detailed overview and energy calculations of all commissioner Complexes Punjab have been tabulated below in the section. Grid Tied System of appropriate rating as per site requirement and assessment has been proposed. However, Bidder may suggest its appropriate design in this regard.

The wiring conditions, Distribution Boxes, Sub Distribution Boxes and retrofitting of each complex has also been investigated. Following the scrutiny of said items adequate BOQ of retrofitting is prepared however, in case you find anything suitable to amend, we would consider in preparation of final BOQ.

Note: The details drawings for each building roof top are enclosed in drawings.

2.0 TECHNICAL ASSESSMENT

Currently Employer is planned to Construct an expected/ estimated 501.5 KW Solar Based Power Plant Project in nine Commissioner complexes in Punjab with following deliverables on currently available Area for each commissioner complex:-

- Designing of Solar Based Power Plant
- Supply of Solar Based Power Plant
- Installation of Solar Based Power Plant
- Testing & Commissioning of Solar Based Power Plant
- Operation and maintenance for the period of two (02) years.
- Supplies and installation of Buildings retrofitting
- Supplies of Misc Material

2.1 Area Available for Solar PV Modules:

The area available and the expected/ estimated capacity of Solar PV modules for each building can be summarized as below: -

Sr#	Description	Expected Load	Transformers (Rating KVA)	Available Area		Expected Solar Installed capacity (KW)
			Actual at Site			
1	Commissioner Complex, Multan.	56 KW	100	344	SM	50.15
				55.92	SM	
				198	SM	
				128.27	SM	
2	Commissioner Complex, Dera Ghazi Khan.	50 KW	50	541.55	SM	50.15
				453.56	SM	
3	Commissioner Complex, Bahawalpur.	40 KW	25	141.81	SM	50.15
				104.69	SM	
				141.81	SM	
4	Commissioner Complex, Sahiwal.	60 KW	25	230.19	SM	10.03
				224.18	SM	40.12
				140.65	SM	
5	Commissioner Complex, Lahore.	80 KW	100	460	SM	100.3
6	Commissioner Complex, Gujranwala.	45 KW	150	437	SM	50.15
				460	SM	
7	Commissioner Complex, Faisalabad	50 KW	150	851	SM	60.18
8	Commissioner Complex, Sargodha.	45 KW	150	230.19	SM	40.12
9	Commissioner Complex, Rawalpindi	60 KW	25 x 2	230.19	SM	50.15
Expected Capacity of Solar Based Power Plant				501.5 KW		

2.2 Strength/ Configuration of Roof:

It is important to mention here that the roof tops of each building are comprises of following configuration:-

2.2.1 Strength/ Configuration of Roof of New Buildings

1. 6.0" RCC Slab
2. 4.0" Mud
3. 1.5" Tuff Tile at the Top



Fig: Roof Configuration of New Building

2.2.1 Strength/ Configuration of Roof of Old Buildings

1. 3.0" RCC Slab, or 3" Dots, or T- Guarders
2. Heat resistant configuration having 2" Tile/Tasu and Mud 4" –to-1 foot at different locations



Fig: Roof Configuration of Old Buildings

Now it is assumed that PV modules along with structure and base will enhance surplus weight of 50 Kg/m² on the roof and the building is in good condition to bear that weight. However designer is supposed to re-Evaluate Building infrastructure before implementing the project. It is therefore project executer must share its civil work for subject Roof so that the EXEN building reviews the design proposed and play a role for project execution.

2.3 Base Structure:

2.3.1 New Building

The fixed based mechanical structure has been suggested to install with appropriate angle on the space available at site. It is intimated that new building with brick tough tiles on

the roofs are not feasible to install solar PV infrastructure. To comply installation of the Solar PV modules, tough tiles of size 9x4.5 inches² need to be removed. Concrete structure of appropriate size would be paved on which mechanical structure for solar PV modules will be screwed. Proper civil work will be done so as to cater wind speed of up to 130 Km/hr.

i. Old Buildings

The fixed based mechanical structure also has been suggested to install with appropriate angle on the space available at site of old buildings. It is intimated that old building with heat resistant mechanism on the roofs are not feasible to install solar PV infrastructure. To comply installation of the Solar PV modules, Heat resistant configuration having heat resistant material (Normally Mud) 4”-to-1 foot need to be removed. Concrete structure of appropriate size would be paved on which mechanical structure for solar PV modules will be screwed. Proper civil work will be done so as to cater wind speed of up to 130 Km/hr.

2.4 Placement of Power Inverter:

We hereby suggest to place inverter in line to the DB of each building. However the project executer may redesign the number of quantities and placement of Power Inverters for subject Buildings considering aesthetic of the Building.

2.5 Using of Cable Trays/ Tranches

It is expected to ensure proper dressing/coverup of each cable across the building.

The further requirement for execution of the project is covered in Scope of work as discussed below:-

3.0 Scope of Work:

The scope covers supply, installation, testing, commissioning and performance testing of expected 500 KW Grid interactive roof top solar photovoltaic systems at commissioner Complexes in Punjab. The Scope of work includes but not limited to that is as follows:-

- It should cover installation/placement of PV modules, On-Grid inverters, junction boxes, AC, DC distribution boards and cables, net metering, communication interface, and any other equipment necessary for safe and efficient operation of the system.
- Services also includes interconnection of installed PV System with the national grid and separate energy meter for each building for billing.
- The civil works for installation of complete system.
- Operation and maintenance of the Solar Power Generation System for stipulated time.
- Maintain essential spares necessary for operation, routine maintenance and testing of equipment supplied for stipulated time.
- The equipment offered should conform in all respects to high standards of engineering, design, workmanship and capable of performing efficiently.

- All the fittings and accessories that might not have been mentioned specifically in the specifications but are necessary for equipment's of the plant, should be deemed to be included in the scope of specification and shall be supplied and furnished by the installer without any extra charges.
- Ensure all the works as per scope of the specification are completed for safe and efficient working of the system by following BS OHSAS standards. Health & Safety expert would be responsible to restrict Client to follow safety standards.
- It is pertinent of mention here that our Consultant is authorized to interpret during installation and authorized to verify equipment, detailed drawings, specification and should have the power to reject any work or materials, which in his prudent judgment are not in full accordance therewith.
- The wiring conditions, Distribution Boxes, Sub Distribution Boxes and retrofitting of each complex has also been investigated. Following the scrutiny of said items adequate BOQ of retrofitting is prepared however, in case you find anything suitable to amend, we would consider in preparation of final BOQ.
- Further contractor shall propose appropriate energy saving and capacity equipment for each complex
- Contractor must manage/arrange the Pre Shipment visit for the personnel nominated by energy department Punjab.

3.1 Minimum Technical Specifications Requirement for Solar Panel and Allied Equipment.

Note- The technical specifications of the Solar Panels & allied equipment must fulfill the standard requirements (PSS# IES) as per the import policy S.R.O 604 (I) /2019, Dated 28th May 2019. Verifiable Test Certifications for the required standards must be provided with the technical proposals. In case of discrepancy, the mentioned S.R.O shall prevail.

This document provides minimum technical requirements for solar panels and allied equipment. “ All products should be compliant to relevant IEC standards/ specifications; however, other equipment, international standards may be used where, IEC relevant standard is not available, as per the project requirement, with subject to prior approval of the project director.

I. Solar PV Panels

S.No	Parameters	Min. Specifications required
1	Module Make	Tier 1, Brand should be verifiable for the procurement year
2	PV Module Capacity	535 Watts or above (as per design)
3	PV Module Type	Mono PERC
4	Cell Quality	A Grade (verifiable)
5	Module Efficiency	20% or higher
6	Power Tolerance	Must be + 3% or more

7	Operating cell Temperature	minus 40C to positive 85C
8	Temperature coefficient	minus 40 %/ C or less
9	bypass diode	AS per design
10	Bus bar	4 or higher
11	Certification	IEC 61215, IEC 61730, IEC 61439, IEC 60947-3 as amended to date ,PID FREE
12	Frame	Must withstand 5400 PA impulse Load
13	Junction box	IP 67 or better
14	Cable	4mm2 (IEC), 1000mm or higher (As per design)
15	Connectors	MC4 or comparable weather proof
16	Front cover	3.2 thick prism type tempered glass or higher
17	Product Warranty and Guarantee	10 years product replacement warranty power output within 10 years shall not fall below 90% Power output within 25 years shall not fall below 80%
		10 years full replacement of module, if the major components malfunctioning PV module performance guarantee 25 years or more Type of performance guarantee shall be final after 1st year

II. On-Grid Solar Smart Inverter

S.No	Parameters	Min, Specification required
1	Inverter Make	1 GW or above deployment in last two years . Renowned and verifiable brand having successful performance history in similar climatic conditions.
2	Inverter Type	Grid synchronized with generators on site
3	Output Voltage Range	230VAC/400 VAC $\pm 5\%$ FOR String/micro inverters, for central inverters select as per design
4	IP Protection	IP 65 or better (IEC 60529)/outdoor use with natural heat sink
5	Standby Power consumption	Max 3 watt
6	EU/CEC efficiency Euro-ETA	$\geq 95\%$ or above
7	Protections	Short Circuiting, Surge Protection, PV reverse polarity protection, Anti-Islanding Protection, Leakage current protection, High Insulation Input, Over voltage (PV)(if built-in), Harmonics filters as per IEC standards Output, Over voltage (C)
8	Operating temperature For Ambient	minus 5C to minus 55C

9	Communication	With Remote Monitoring Feature, Mobile App, Web Server user Interface, Cloud Connected. Realtime System Monitoring, Alerts, Faults and Warning data display, System Statistics, System Parameters, PV predicted values, Forecasted values, Load data, Energy Data, Net Metering Data Control.
10	Humidity	10-90%RH
11	THD	<=3% As per IEC 61000-3-2 (as amended to date)
12	Guarantee	5 years Replacement Guarantee
13	Warranty	10 Years or above transfarable warranty from the original inverter manufacturer shall be provided or as defined in the RFP
14	Input Voltage Range	150-950 V or above (depending upon the selected design)
15	Power Factor	0.9 leading to 0.9 lagging(Grid Code Complaint)
16	Minimum Applicable Standards and Compliances	IEC:62109-1, IEC:62109-2, IEC 61683, IEC 62116, IEC 61727, UL:1741/IEEE:1547, 60068-2.(as amended to date)

III. Solar PV Panel Mounting Structure

S.No	Descriptions	Requirements
Following are tentative out lines, actual design will be site dependent and may varies		
1	Roof structure material	Hot dip galvanized (min 90 micron) or aluminum frame with more than 20 years of proven life
2	In case of pole mounting	The height of the pole shall not be 3 meters Also the used for parking purpose, strong supporting structure, made of stainless steel or hot dip galvanized iron, with min galvanization of 90 microns
3	Theft protection	The mounting structure must come with an anti-theft protection to impede demounting of modules
4	Material Gauge	SWG 14 or better /as per design. fastener (nut, bolt, clamp) must be of stainless steel type.
5	Material and wind loading	<ul style="list-style-type: none"> Mounting structure to support the module must be made of durable material, resistant to sand storm, high wind speed upto 40m/s Corrosion (passing the salt spray test IEC 61701, among other verification),and UV induced degradation . The material must be compatible with the module frame material so as to avoid any adverse electrolytic/ galvanic effects
6	Civil work	<ul style="list-style-type: none"> Stricter should support the existing roof top/ground mounting the design shall be able to with stand the maximum wind loading

		<p>requirements of 40m/s .design shall be supported with proper calculations.</p> <ul style="list-style-type: none"> • The stability of the supporting structure after installation shall be guaranteed by the bidder. • To avoid the drilling in the roof, use appropriate arrangements for strengthens the structure without damage the roofs. • Pointed dead –loads on roof top surface must be avoided. • Additional beams can be casted to avoid drilling of roofs. • Water drainage must not be considered, separate WATER CHANNELS must be maintained for water drainage. • The supporting structure must be considered must be grounded for short circuit and lightning protection through independent earthing .
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IV. Cabling, Combiner Boxes and Earthing

1. All exposed wiring (with the possible exception of the module interconnects) must be covered in conduits/duct. Wiring through roofing must form a waterproof seal (applicable for wiring only).
2. For conduit and duct flexible PVC material with suitable size must be use, so that $\frac{3}{4}$ spaces in a conduit should be empty.
3. Field installed wiring must e joined using terminal strips or screw connectors. Soldering or crimping in the field must be avoided if at all possible. Wire nuts are not allowed. The rated current carrying capacity of the joint must not be less the circuit current rating. All connections must be made in junction boxes. Fittings for lights, switches, and polarity sensitive socket outlets may be used as junction boxes where practical.
4. All wiring shall be color coded as per IEC standards and labeled at termination point.
5. No conduit or fitting shall be attached directly to thatch or any other non-supportive surface.
6. Especially avoid installing the conduit direct over the roof; there must be distance not less than 2 inches between between the roof surface and conduit/duct.
7. Cables must be joined by the use of junction boxes, screw connectors, and block connectors, MC4 or Equivalent connectors must be used for PV joints.
8. All wires must be terminated with proper end sleeves and wire thimbles with different colors for positive and negative polarity
9. Size, voltage grade and manufacturer name should be printed on every cable
10. Cable Voltage drop specification are as followed that must be verified through software simulation/Calculations.
11. Earthing as per NEPRA net metering rules for all sites.

Sr. No.	Item	Requirement
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12	Solar PV to inverter;	Voltage drop less than 2 % tin cotted (stranded and flexible), 99.9% pure copper fire resistive insulation
13	Grid/LV Distribution Board to Inverter	Voltage drop less than 2%, 99.9% pure copper fire resistive insulation

V. Solar PV Combiner Box (Junction Box)

Sr. No.	Parameters	Description
1	Solar PV Input	As per design
2	Solar PV Max. Input Voltage	1000VDC (IEC) or Higher
3	No. of Solar PV array inputs	As per design
4	Protections	Lightening Protection
		DC over voltage protection
		Short circuit Protection
		Fuse/ Breaker Protection
		AC & DC disconnecting switch
5	Protection Class	IP 66 or better
6	Relative humidity	10~90 %

VI. Lightning/air termination rod and Surge Protection devices;

Sr. No.	Parameters	Min. Specifications Required
1	Air termination rod material	99 % Pure Copper
2	Air termination rod Length	As per design
3	Earthing Pit	Less than 2 Ohm (NEC codes) 99% Pure Copper plate/rod. Size and weight of plate/rod varies from site to site
4	Air termination rod diameter	As per design
5	Air termination rod	As per design
6	Cable for structure	2.5 mm ² or higher, 99.99% pure copper (strip or single conductor)
7	Cable for interconnecting/ Grounding metal structure	6 mm ² or higher, 99.99% pure copper
8	Insulated Spacer	As per design
9	Cable Bracket	As per design
10	Stand- Fang Fix system	As per design
11	Recommended method for calculation	Rolling sphere method

12	Functional Compliance	IEC 62305-3 (EN62305-3) IEC 62305-3 (EN62305-3) or equivalent
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VII. Surge Arrester (with or without counter)

Sr. No.	Parameters	Min. Specifications Required
1	Applications	Both DC side & AC sides
2	Discharge current (I max)	Min. 20 kA (8/20 μ sec)
3	Impulse current (I imp)	Min. 25 kA (10/350 μ sec)
4	Response Time	≤ 50 n sec
5	Leakage current	≤ 1 mA
6	Die Electric strength	2000 V AC @ 1 minute
7	Protection class	Class 2 (Type 2) minimum
8	Discharge Voltage	600 V DC (Line to earth) or above (matching the size of inverter)
9	Ingress Protection	Minimum IP 20 (placed in IP 65 box along with other protections)
10	Short circuit with stand capacity	min. 30 kA

Note: The external surge arrestors/ protection AC/DC may be added by the procuring department/ agency, if required according to the specific site requirement

VIII. Retrofitting

Sr. No.	Parameters	Min. Specifications Required
1	LED lights(18 Watts)	Lumen / Watt : 100 Power Factor : 0.95 Color Temperature : 4500-6500 K Lifetime: >40,000 hours
2	LED Tube Light (40 Watt)	Lumen / Watt : 100 Power Factor : 0.95 Color Temperature : 4500-6500 K Lifetime: >40,000 hours
3	Search Light (100 Watt)	Lumen / Watt : 100 Power Factor : 0.95 Color Temperature : 4500-6500 K Lifetime: >40,000 hours
4	Ceiling Fan (65 Watt)	Three star labelled

3.2 Other Features:

- (i) The PV Module(s) should be warranted for a minimum period of 25 years from the date of supply, inverter with five years from the date of installation. The warranty card to be supplied with the system must contain the details of the system. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.
- (ii) Adequate space should be provided behind the PV module/array for allowing unobstructed airflow for passive cooling.
- (iii) Cable of appropriate size should be utilized to keep electrical losses to a bare minimum (e.g. length of the wire from module to combiner Box and Combiner Box to Hybrid Inverter should be as minimum as possible).
- (iv) The control electronics should not be installed directly with the battery. All wiring should be in proper conduit of capping casing. Wire should not be hanging loose.
- (v) Instruction and O&M manuals
 - ✓ Two copies of Instruction and Operation and Maintenance Manual in English and local language should be provided with the system.
 - ✓ The manual shall be furnished at the time of dispatch of the equipment and shall include the following aspects:
 - a. Precautions during unpacking
 - b. Instructions for handling at site.
 - c. Erection drawings with written assembly instructions that would enable the Purchaser to carry out erection with his own personnel if opted by him.
 - d. Detailed instructions and procedures for the installation operation and maintenance.
 - e. Pre-commissioning tests.
 - f. About solar PV system – its components and expected performance.
 - g. Clear instructions about mounting of PV module (s)
 - h. About electronics
 - i. DO's and DONT's
 - j. Principle of Operation of various equipment
 - k. Safety and reliability aspects
 - l. Metering scheme
 - m. About power conditioning units software and controls
 - n. Clear instructions on regular maintenance and trouble shooting of solar power plant.
 - o. Name and address of the person or service centre to be contacted in case of failure or complaint.
 - p. Outline dimension drawings showing relevant cross sectional views, earthing details, constructional features. Rated voltages and current etc.

3.3 Harmonics Standard:

As per the standard of **IEEE 519**, the permissible individual harmonics level shall be less than 3% (for both voltage and current harmonics) and Total Harmonics Distortion (THD) for both voltage and current harmonics of the system shall be less than 5%.

3.4 Technical and interconnection requirements

Overall conditions of service	State Distribution/Supply Code	State Distribution/Supply Code
Overall Grid Standards	Central Electricity Authority (Grid Standard) Regulations 2010	Central Electricity Authority (Grid Standard) Regulations 2010
Equipment	BIS / IEC / IEEE	BIS / IEC / IEEE
Meters	Central Electricity authority (Installation & operation of meters) Regulation 2006 as amended time to time	Central Electricity authority (Installation & operation of meters) Regulation 2006 as amended time to time
Safety and supply	Central Electricity Authority(measures of safety and electricity supply) Regulations, 2010	Central Electricity Authority(measures of safety and electricity supply) Regulations, 2010
Harmonic Requirements Harmonic Current	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013
Synchronization	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Photovoltaic system must be equipped with a grid frequency synchronization device. Every time the generating station is synchronized to the electricity system. It shall not cause voltage fluctuation greater than +/- 5% at point of connection.
Voltage	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	The voltage-operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. Beyond a clearing time of 2 second, the photovoltaic system must isolate itself from the grid.
Flicker	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Operation of Photovoltaic system should not cause
Frequency	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side), There should be over and under frequency trip functions with a clearing time of 0.2

		seconds.
DC injection	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Photovoltaic system should not inject DC power more than 0.5% of full rated output at the interconnection point or 1% of rated inverter output current into distribution system under any operating conditions.
Power Factor	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	The photovoltaic system in the event of fault, voltage or frequency variations must island/disconnect itself within IEC standard on stipulated period.
Overload and Overheat	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored.
Paralleling Device	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Paralleling device of photovoltaic system shall be capable of withstanding 220% of the normal voltage at the interconnection point.

Any minor equipment and material may not be specifically mentioned in this specifications but are required to make the system complete in a every respect in accordance with technical specification shall be deemed to have been covered under the scope of this specification and shall be provided by the tenderer/supplier within the quoted

3.5 Performance Monitoring:

Please ensure provided power plant equipped with all necessary equipment to continuously measure solar radiation, ambient temperature, wind speed and other weather parameters and simultaneously measure the generation of DC power as well as AC power generated from the plant. Subject data will be required to evaluate energy commitment commit by Contractor.

4.0 LIST OF MATERIAL & BOQ FOR SOLAR POWER GENERATION SYSTEM TO BE REQUIRED

4.1 List of Equipment & Material

S. No	Description	Qty
1.0	Power Generation System	
1.1	PV Frame Hot Dip Galvanized MS, SS bolts, Pipes, Flat plate, Angle iron, Nuts, Bolts, Washers, Rawal bolts, Steel rope, Turnbuckles, Anti size, Fabrication	Appropriate

1.2	Solar Module (590 W) PV panels of Mono/Poly crystalline modules ISO9001, CE, TUV and UL certified	850 Nos
1.3	PV DC wires and connectors PV cable AWG # 10, MC4 male & female connectors, GI conduit pipe imported, GI bends, Couplers, Junction Boxes, Screws, Saddles, GI flexible pipe, Copper gland, Multi type connectors, SS wire clips, PVC tapes, VT-5 distribution boxes	1 Lot
1.4.1	Grid Tied Inverter (10KW) 3-Phase PV Grid Tied inverter	1 No
1.4.2	Grid Tied Inverter (25KW) 3-Phase PV Grid Tied inverter	6 No
1.4.3	Grid Tied Inverter (36KW) 3-Phase PV Grid Tied inverter	1 No
1.4.4	Grid Tied Inverter (40KW) 3-Phase PV Grid Tied inverter	1 No
1.4.5	Grid Tied Inverter (50KW) 3-Phase PV Grid Tied inverter	5 No
1.5	Electric Items & AC/DC wiring Breaker box IP65 imported, Breakers, Earth leakage circuit breakers, DC lighting arrestors	1Lot
1.6	Electric items wiring & installation Grounding Wire Copper, CU-U-Clamps, CU-earth rods, CU saddles, Rawal bolts, Screws, Plugs, Cable ducts imported, Battery Stand, Battery Aluminum cover, PE Cable, SS lugs, Live-Neutral-PE-Cables, Cable markers, Bus Bar, Sockets, Safety Labels, 35mm ² cable boots, SS lugs 35 mm, SS nuts/bolts	1Lot
1.7	Lightening & Earthing Solution	1 Lot
1.8	Electricity Connection Energization Transformer 100 KVA Demand Notice Plus other Accessories	1 Job
2.0	PV-Genset Synchronization Equipment	
2.1	PV-Diesel Genset Synchronization system for New Block	9No
3.0	Monitoring & Data Logging System	
3.1	Monitoring & Data Logging System	9 No
4.0	Retrofitting	
4.1	Supply and installation of Retrofitting	9 No

4.2 OPERATION AND MAINTENANCE

Compare to most other power generating technologies, PV Plant has much lower maintenance and servicing requirements. However, for optimum use of the system and maximizing life of the Plant following is planned:

4.2.1 The basic concept

- The project Client will be responsible for O&M by hiring right expertise at minimum scale of permanent staff.
- The supplier will conduct the training and capacity building of the O&M Staff.
- The supplier will be engaged for supervision of the scheduled maintenance during two years.
- Backup support / availability of spares / equipment same or matching specifications will be guaranteed by supplier.
- Down time will be minimized by continuous monitoring local / remote and not allowed beyond three hours except condition beyond human control.

4.2.2 Operation & Maintenance of Plant (O&M)

O&M will be carried out by Client. However, Supplier will be responsible to carry out the maintenance during warranty period. Maintenance is broken into:

1. A-1 Scheduled maintenance:

Scheduled maintenance will be carried out twice a year. For two Years, it will be the responsibility of supplier, using non-production time mostly. It will include:

- Module connection integrity
- Inspection / maintenance / repair of junction boxes
- Thermography test
- Inverter servicing
- Structural integrity
- Balance of plant inspections / maintenance / repairs
- iPV Tracker servicing
- Performance evaluation and optimization
- Spares & Reports

A-2 Un-Scheduled

Un-Scheduled maintenance will be carried out urgently in-response to failure and routine maintenance.

A-3 Panel cleaning

Fortnightly Panel cleaning will be the responsibility of the contractor during O&M period.

2. 5.3.3 Training of O&M Staffs

- **At Service Provider:** Training to the Client personnel, 02 men per site for 02 weeks, for operation, trouble shooting and maintenance of the plant and its auxiliaries in manufacturer premises on site free of cost.
- **On Site:** Training for Client personnel of different expertise on-site during installation/commissioning for effectiveness.
- Details of training modules will cover following details to be finalized after final contract.
 - i. Training of electrical/mechanical staff - Installation
 - ii. Training of electrical/mechanical staff – Maintenance
 - iii. Training of operational staff

4.3 Performance Test

The performance test for at least 06 hours/day for one week (07 days) will be conducted right after the commissioning/grid connection. Since all the tests will be performed after mutual understanding between Client & Supplier/ Installer.

Performance Optimization Strategy

- i. Shading : Nil all times
- ii. Incidence : a. Anti-reflection coating
 - b. Texture glass
 - c. Tracking system
- iii. Low Irradiance : Modules with good performance in low irradiance
- iv. Soiling : Regular Module Cleaning
- v. Module Quality : 100% Modules in + 0~3 % Range
- vi. Module Mismatch:
 - a. Similar Specs Modules in string
 - b. No String Shading
 - c. No variation in module tilt angles
- vii. DC Wiring : Minimum length and appropriate dimensioned
- viii. Inverter Performance : High Efficiency 98% and correctly sized, Max. MPPT
- ix. AC Losses : a. Correctly dimensioned cable
 - b. Minimum Length
 - c. Efficient Transformer

4.6 Installation / Commissioning of the Plant

- After receiving contract from client, Supplier will perform deliverables as per agreed terms and conditions. However the installation practices will be following the criteria as IEC62445.
- The commissioning will start immediately after installation.
- Supplier's full team of engineers will supervise.
- Test results will be recorded and signed-off.
- A full final acceptance test (FAT) requirement / procedure will be performed after mutual understanding between Supplier and Client. However the FAT must includes:
 - i. Pre-connection Test
 - ii. PR Ratio Measurement
 - iii. Open Circuit Voltage Test
 - iv. Short Circuit Current Test
 - v. Availability Test 6 Hrs / 7 Days (Average)

DRAWINGS

Proposed layout drawings



Figure 1 Layout Plan Multan



Figure 2 Layout Plan D G Khan



Figure 3 Layout Plan Bahawalpur



Figure 4 Layout Plan Sahiwal



Figure 5 Layout Plan Lahore



Figure 6 Layout Plan Gujranwala



Figure 7 Layout Plan Faisalabad



Figure 8 Layout Plan Sarghodha



Figure 9 Layout Plan Rawalpindi

