



IPL No. 1248

Tender Notice

FOR

**Procurement & Installation of Solar System
at City Campus, UVAS, Lahore**

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SECTION-I: INVITATION TO BIDS

1.1 INVITATION TO BIDDERS

TENDER NOTICE THROUGH EPAD

Procurement & Installation of Solar System at City Campus, UVAS, Lahore

University of Veterinary & Animal Sciences (UVAS), Lahore invites electronic bids through the E-PAK Acquisition and Disposal System (E-PADS) from interested bidders i.e manufacturer/Exclusive authorized sole distributor of Foreign Manufacturer, agent / Contractors / firms/ sole proprietor / Suppliers registered with income tax, Punjab sales tax on services (PRA), General Sales Tax (GST) and Professional Tax registered firms.

Single stage two envelop bidding procedure shall be applied on EPAD, PPRA Punjab. All bids should be submitted electronically through the E-Pak Acquisition and disposal system (E-Pads) by **26-02-2026**, at **11.00 a.m** shall be opened on same day at **11.30 a.m** through E-PAD in the presence to the bidders, the URL of the website of the PPRA is (<http://eproc.punjab.gov.pk/ViewTender.aspx>) and response time shall be calculated exclusively from the date of publication of the advertisement on the website of the PPRA. Original **2% Rs. 2,000,000/- Bid Security (Refundable) of Rs. 100,000,000/- Estimated Price** in the form of **CDR, (DD) and (PO) or Banker's cheque** in the favor of "**Treasurer, UVAS, Lahore**" should be submitted **in original form** to purchase section UVAS, Lahore on or **before 11.00 a.m by 26-02-2026**. The bids will be **opened only on E-PADS 26-02-2026 at 11:30 a.m**. The Interested eligible bidders may obtain further information from the Purchase Section of UVAS, Lahore. No bid other than EPADS will be accepted. UVAS, will not be responsible for any cost or expense incurred by bidders in connection with the preparation of Bids. If there is a public holiday announced by the Government, on the tender opening date, then the tender will be opened on the next working day.

Note. All assessment and procurement procedures, including uploading at E-Pads, downloading/receiving, opening evaluating and awarding, shall be governed by the Punjab Procurement Rules-2014 amended upto date from time to time. In case of any conflict between the bidding documents and the PPRA Rules, 2014, the rules shall prevail.

Ch. Muhammad Shafique
Secretary Procurement Committee
University of Veterinary & Animal Sciences, Lahore

Section-II: Instructions to Bidders (ITB)

[The Procuring Agency should formulate Instruction to Bidders in accordance with PPR-14 keeping in view its Requirements, Nature of Procurement i.e. Bulk/Framework, Item Wise/Package Wise and Form of Contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/ contract, contents of a generalized Instruction to Bidders are given below.]

Note:- All the procurement procedures shall be conducted in accordance with Punjab Procurement Authority Act-2009 and Punjab Procurement Rules-2014. In case of any conflict between the provision of this document and PPRA Act-2009/ PPRA Rules-2014, the later shall prevail.

2.1. Introduction

2.1.1 Scope of Bid

- i) The Procuring Agency (PA), as indicated in the Bid Data Sheet (BDS) invites Bids for the provision of Goods as specified in the Section-IV Bid Data Sheet (BDS) and Section III - Technical Specifications & Section VII- Schedule of Requirements. The successful Bidders will be expected to deliver, install/ commissioning) the goods within the specified period and timeline(s) as stated in the BDS.

2.1.2 Source of Funds

- i) The Procuring Agency named in the Bid Data Sheet has received budget from the Government of Punjab. The Procuring Agency intends to apply the provided funds/ a portion of this budget to make eligible payments under the contract for which the Invitation to bids has been issued.

2.1.3 Eligible Bidders

- i) The Invitation to Bids is open to all suppliers i.e. association of firms/companies/sole proprietor/ general order suppliers/ JVs, registered with relevant Registration Authorities and Tax Departments/ Authorities (Income Tax, Sales Tax & Punjab Sales Tax etc.) **[to be decided by the Procuring Agency]**, except as provided hereinafter.
- ii) Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Procuring Agency to provide consultancy services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation to Bids [if applicable].
- iii) Government-owned enterprises may participate only if they are duly/legally authorized in this regard by the respective/relevant competent forum/authority.
- iv) Bidders shall not be under a declaration of blacklisting by the

Procuring Agency.

- v) In the case of a Joint Venture, Consortium, or Association, all members shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract. The Joint Venture, Consortium, or Association shall nominate a Lead Member as nominated in the BDS, who shall have the authority to conduct all business for and on behalf of any and all the members of the joint venture, consortium, or association during the Bidding process, and in case of award of contract, during the execution of contract.

[It is upon procuring agency to decide the participation of Bidders in J.V mode. The limit on the number of members of JV or Consortium or Association and extent of their role shall be prescribed in BDS, in accordance with the guidelines issued by the PPRA].

- vi) The appointment of Lead Member in the Joint Venture, Consortium, or Association shall be confirmed by submission of a valid JV or Consortium agreement to the Procuring Agency.
- vii) Any agreement that form a Joint Venture, Consortium or Association shall be required to be submitted as part of the Bid and shall be attested.
- viii) Any bid submitted by the Joint Venture, Consortium or Association shall indicate the part of proposed contract to be performed by each party and each party shall be evaluated or post qualified with respect to its contribution only and the responsibilities of each party and shall not be substantially altered without prior written approval of the Procuring Agency and in line with any instructions issued by the Authority.
- ix) The invitation for Bids is open to all prospective Supplier, Manufacturers or Authorized Agents/Dealers/Distributors subject to any provisions or licensing/regulatory requirements issued by the respective National/ Provincial Professional Statutory Body established for that particular trade or business as mentioned in bid data sheet.
- x) A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be Non-Responsive. A Bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if they:

- a) Are associated or have been associated for the procurement of the goods to be purchased under this Invitation for Bids, directly or indirectly with a firm or any of its affiliates which have been engaged by the Procuring Agency to provide consulting services for the preparation of the design, specifications and other documents to be used.
- b) Have controlling shareholders in common; or
- c) Receive or have received any direct or indirect subsidy from any of them; or
- d) Have the same legal representative for purposes of this Bid; or
- e) Have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Procuring Agency regarding this Bidding process; or

xii) A Bidder may be ineligible if –

- (a) The Bidder is declared bankrupt or, in the case of company or firm, insolvent;
- (b) Payments in favor of the Bidder is suspended in accordance with the judgment of a court of law other than a judgment declaring bankruptcy and resulting, in accordance with the national laws, in the total or partial loss of the right to administer and dispose of its property;
- (c) Legal proceedings are established against such Bidder involving an order suspending payments and which may result, in accordance with the national laws, in a declaration of bankruptcy or in any other situation entailing the total or partial loss of the right to administer and dispose of the property;
- (d) The Bidder is convicted, by a final judgment, of any offence involving professional conduct;
- (e) The Bidder is debarred and blacklisted due to involvement in corrupt and fraudulent practices in accordance with the provision of section 17A of PPRA

Act, 2009 and Rule-21, read with Schedule appended with, Punjab Procurement Rules, 2014.

(f) The Bidder is debarred and blacklisted in general (i.e. to the extent of all public procurement) due to consistent performance failure in accordance with the section 17A of PPRA Act, 2009 and Rule-21, read with Schedule appended with, Punjab Procurement Rules, 2014.

(g) The firm, supplier and contractor is blacklisted/ debarred by any international organization.

xiii) Bidders shall provide to the Procuring Agency evidence of their eligibility, proof of compliance with the necessary legal requirements to carry out the contract effectively.

xiv) Bidders shall provide such evidence of their continued eligibility satisfactory to the Procuring Agency, as the Procuring Agency shall reasonably request.

xv) Bidders shall submit proposals relating to the nature, conditions and modalities of sub-contracting wherever the sub-contracting of any elements of the contract amounting to more than ten percent of the Bid price is envisaged.

2.1.4. Eligible Goods and Services

i) All goods and related services to be supplied under the Contract shall have their origin in eligible source countries, defined in the *Bid Data Sheet (BDS/Technical Specification)*, and all expenditures made under the contract will be limited to such goods and related services.

ii) For purposes of this clause, "origin" means the place where the goods are mined, grown, or produced, or the place from which the related services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially-recognized product is obtained that is substantially different in basic characteristics or in purpose or utility from its components.

iii) The origin of goods and services is distinct from the nationality of the Bidder. *In any case, the requirements of Rules 10 & 26 of PPR-14, shall be followed.*

2.1.5. Cost of Bidding

i) The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Procuring Agency named in the Bid Data Sheet, hereinafter referred to as "the Procuring Agency," will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the Bidding

process.

2.1.6. One person one bid

- i) As per Rule 36A of Punjab Procurement Rules 2014, a Bidder shall submit only one Bid in the same bidding process, either individually as a Bidder or as a member in a joint venture or any similar arrangement.
- ii) No Bidder can be a sub-contractor while submitting a Bid individually or as a member of a joint venture in the same Bidding process.
- iii) A Bidder, if acting in the capacity of sub-contractor in any Bid, shall not submit bid for the same.

2.2. The Bidding Documents

2.2.1. Content of Bidding Documents

- i) The goods required, Bidding procedures, and contract terms are prescribed in the Bidding documents. The Bidding documents, inter alia, include:
 - (a) Invitation to Bids
 - (b) Instructions to Bidders (ITB)
 - (c) Technical Specifications
 - (d) Bid Data Sheet
 - (e) General Conditions of Contract (GCC)
 - (f) Special Conditions of Contract (SCC)
 - (g) Schedule of Requirements
 - (h) Bid Form
 - (i) Manufacturer's Authorization Form
 - (j) Bidder Profile Form
 - (k) General Information Form
 - (l) Affidavit
 - (m) Bid Security Form
 - (n) Technical Bid Form
 - (o) Contract Form

(p) Financial Bid Form / Price Schedule

(q) Performance Guarantee Form

(r) Check List

- ii) The Bidder is required to examine all instructions, forms, terms, and specifications in the Bidding documents. Failure to furnish all information as required by the Bidding documents or to submit a Bid not responsive to the Bidding documents in every respect will be at the Bidder's risk and may result in the rejection of its Bid.
- iii) In case of discrepancies between the Invitation to Bid and the Bidding Documents listed in **ITB 2.2.1 (i)** above, the said Bidding Documents, not in conflict with any provision of PPR-14, will take precedence.
- iv) The Procuring Agency is not responsible for the completeness of the Bidding Documents and their addenda, if they were not obtained directly from the Procuring Agency or from its website or website of PPRA. Re-confirming from the Procuring Agency that all pages/ contents have been properly and clearly received is the prime responsibility of the Bidder.

2.2.2. Clarification of Bidding Documents

- i) A prospective Bidder requiring any clarification of the Bidding documents may notify the Procuring Agency in writing or by email at the Procuring Agency's address indicated in Invitation to Bid/ Tender Notice/ Advertisement. The Procuring Agency will respond in writing to any request for clarification of the Bidding documents which it receives no later than seven (7) days prior to the deadline for the submission of Bids prescribed in the Bid Data Sheet. Written copies of the Procuring Agency's response (including an explanation of the query but without identifying) will be sent to all prospective Bidders that have received the Bidding documents.
- ii) A prospective Bidder requiring any clarification of the Bidding Documents may notify the Procuring Agency in writing or in electronic form that provides record of the content of communication at the Procuring Agency's address indicated in the **BDS**.
- iii) The Procuring Agency will within three (3) working days after receiving the request for clarification, respond in writing or in electronic form to any request for clarification provided that such request is received not later than seven (7) days prior to the deadline for the submission of Bids. As prescribed in **ITB**

2.2.2 (i), above. However, this clause shall not apply in case of alternate methods of Procurement.

- iv) Copies of the Procuring Agency's response will be uploaded on the website of procuring agency on given date(____) and forwarded to identified Prospective Bidders through an expeditious identified source of communication, e.g.: e-mail etc., including a description of the inquiry, but without identifying its source.
- v) Should the Procuring Agency deem it necessary to amend the Bidding Documents as a result of a clarification, it shall do so following the procedure under **ITB 2.2.3.**
- vi) If indicated **in the BDS**, the Bidder's designated representative is invited at the Bidder's cost to attend a pre-Bid meeting at the place, date and time mentioned **in the BDS**. During this pre-Bid meeting, prospective Bidders may request clarification of the schedule of requirement, the Evaluation Criteria or any other aspects of the Bidding Documents.
- vii) Minutes of the pre-Bid meeting, if applicable, including the text of the questions asked by Bidders, including those during the meeting (without identifying the source) and the responses given, together with any responses prepared after the meeting will be transmitted promptly to all prospective Bidders who have obtained the Bidding Documents and by uploading same on the website of the procuring agency. Any modification to the Bidding Documents that may become necessary as a result of the pre-Bid meeting shall be made by the Procuring Agency exclusively through the use of an Addendum pursuant to ITB 2.2.3. Non-attendance at the pre-Bid meeting will not be a cause for disqualification of a Bidder.

2.2.3. Amendment of Bidding Documents

- i) At any time prior to the deadline for submission of Bids, but not later than three (3) days before the closing date of the submission of Bid, the Procuring Agency, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, may modify the Bidding documents by amendment. Any such change/amendment in the Bidding documents shall be provided in a timely manner, preferably through electronic means also, not later than three (3) days, and on equal opportunity basis as per Rule-25(3) OR Rule 25(4) of PPR-14 as the case may be.
- ii) In order to allow prospective Bidders reasonable time in which to take an addendum into account in preparing their

Bids, the Procuring Agency, at its discretion, may extend the deadline for the submission of Bids, as per rule 29 of PPR-14, in the manner similar to the original advertisements, so as to avoid any inconvenience and to doubly ensure level playing field for all prospective bidders.

2.3. Preparation of Bids

- 2.3.1. Language of Bid**
- i) The Bid prepared by the Bidder, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Procuring Agency shall be written in the language specified in the Bid Data Sheet. Supporting documents and printed literature furnished by the Bidder may be in same language.
- 2.3.2. Bid Form**
- i) The Bidder shall complete the Bid Form and the appropriate Price Schedule (Financial Bid) furnished in the Bidding documents, indicating the goods to be supplied, a brief description of the goods, their country of origin, quantity, and prices.
- 2.3.3. Bid Prices**
- i) The Bidder shall indicate on form 8.10 the unit prices (where applicable) and total Bid price of the goods it proposes to supply under the contract.
 - ii) Prices indicated on the Price Schedule shall be item wise/ package wise ***[to be decided by the Procuring Agency on form 8.10]***
 - iii) The Bidder's separation of price components in accordance with ITB Clause 2.3.3(ii) above will be solely for the purpose of facilitating the comparison of Bids by the Procuring Agency and will not in any way limit the Procuring Agency's right to contract on any of the terms offered.
 - iv) Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account, unless otherwise specified in the Bid Data Sheet. A Bid submitted with an **adjustable price quotation** will be treated as non-responsive and may be rejected.
- 2.3.4. Bid Currencies**
- i) Prices shall be quoted in **Pak Rupees** for local/DDP items unless otherwise specified in the Bid Data Sheet.
- 2.3.5. Documents Establishing Bidder's Eligibility**
- i) Pursuant to ITB Clause 2.1.3, 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

and Qualification

accepted.

- ii) The documentary evidence of the Bidder's eligibility to Bid shall establish to the Procuring Agency's satisfaction that the Bidder, at the time of submission of its Bid, is eligible as defined under ITB Clause 2.1.3.
- iii) The documentary evidence, of the Bidder's qualifications to perform the contract if its Bid is accepted, shall establish to the Procuring Agency's satisfaction:
 - (a) that, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' Manufacturer [*Manufacturer's Authorization form No. 8.3*] or producer to supply the same in Pakistan;
 - (b) that the Bidder has the financial, technical, and production capability necessary to perform the contract;
 - (c) that, in the case of a Bidder not doing business within Pakistan, the Bidder is or will be (if awarded the contract) represented by an Agent in that country equipped, and able to carry out the Supplier's maintenance, repair, and spare parts stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and
 - (d) that the Bidder meets the qualification criteria listed in the Bid Data Sheet.

2.3.6. Documents Establishing Goods' Eligibility and Conformity to Bidding Documents

- i) Pursuant to ITB Clause 2.1.4, the Bidder shall furnish, as part of its Bid, documents establishing the eligibility and conformity to the Bidding documents of all goods and related services which the Bidder proposes to supply under the contract.
- ii) The documentary evidence of the eligibility of the goods and services shall consist of a statement in the Price Schedule/Financial Bid Form of the country of origin of the goods and services offered which shall be confirmed by a **Certificate of Origin** issued at the time of shipment.
- iii) The documentary evidence of conformity of the goods and services to the Bidding documents may be in the form of literature, drawings, data and shall consist of:
 - (a) a detailed description of the essential technical and performance characteristics of the goods;

- (b) a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period to be specified in the Bid Data Sheet, following commencement of the use of the goods by the Procuring Agency; and
 - (c) an item-by-item commentary on the Procuring Agency's Technical Specifications demonstrating **responsiveness** of the goods and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.
- iv) For purposes of the commentary to be furnished, the Bidder shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Procuring Agency in its Technical Specifications, are intended to be descriptive only and not restrictive.
- v) Where a sample(s) is required by a procuring agency, the sample shall be:
 - (a) submitted as part of the bid, in the quantities, dimensions and other details requested in the **BDS**;
 - (b) carriage paid;
 - (c) received on, or before, the closing time and date for the submission of bids; and
 - (d) Evaluated to determine compliance with all characteristics listed in the **BDS**.

{However, the procuring agency may also opt to ask for samples after submission of technical bids (where require)}
- vi) The Procuring Agency may retain the sample(s) of the successful Bidder till the successful delivery of the goods. A Procuring Agency may reject the Bid if the sample(s)-
 - (a) do(es) not conform to all characteristics prescribed in the bidding documents; and
 - (b) is/are not submitted within the specified time clearly mentioned in the Bid Data Sheet.
- vii) Where it is not possible to avoid using a propriety article as a sample, a Bidder shall make it clear that the propriety article is displayed only as an example of the type or quality of the goods being Bided for, and that competition shall not thereby be limited to the extent of that article only.
- viii) Samples made up from materials supplied by a Procuring Agency shall not be returned to a Bidder nor shall a Procuring

Agency be liable for the cost of making them.

- ix) All samples produced from materials belonging to an unsuccessful Bidder may be kept by the Procuring Agency till thirty (30) days from the date of award of contract or exhaust of all the grievance forums (including those pending at Authority's Level or in some Court of Law).
- x) **Pursuant to the requirements as indicated in ITB 2.3.6, the Bidder shall furnish, as part of its Bid, all those documents establishing the eligibility in conformity to the terms and conditions specified in the Bidding Documents for all goods and related services which the Bidder proposes to deliver.**
- xi) The Bidder shall also furnish a list giving full particulars, including available sources and current prices of goods, spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period **specified in the BDS** following commencement of the use of the goods by the Procuring Agency.-
- xii) The required documents and other accompanying documents must be in English. In case any other language than English is used the pertinent translation attested by the embassy in country of manufacturer into English shall be attached to the original version.

2.3.7. Bid Security

- i) The Bidder shall furnish, as part of its Bid, a Bid security in the amount specified in the Bid Data Sheet.
- ii) The Bid security is required to protect the Procuring Agency against the risk of Bidder's conduct which would warrant the security's forfeiture Pursuant to ITB Clause 2.3.8. (vii).
- iii) The Bid security shall be in Pakistan Rupees and shall be in one of the following forms:
 - (a) Bank call-deposit (CDR), Demand Draft (DD), Pay Order (PO) or Banker's cheque valid for
() Days, beyond the validity of Bid. *[to be decided by the Procuring Agency keeping in view the time to be taken till award of contract or signing of contract agreement and chances of extension in Bid validity if any. The number of days will be expressed in word and figures].*
- iv) Any Bid not secured in accordance with ITB Clauses 2.3.8 (i) and (ii) may be rejected by the Procuring Agency as non-responsive.
- v) Unsuccessful Bidders' Bid security will be discharged or returned as promptly as possible but not later than ()

days [to be inserted by the Procuring Agency in word and figures] after the expiration of the period of Bid validity prescribed by the Procuring Agency pursuant to ITB Clause 2.3.8 (ii) or along with unopened financial proposal as per rule 38(2)(a)(vii) of PPR-14, which shall take precedence, and is as under:

“38(2)(a)(vii) the financial proposal of the Bids found technically non-responsive shall be retained unopened and shall be returned on the expiry of the grievance period or the decision of the complaint, if any, filed by the non-responsive Bidder, whichever is later:

provided that the Procuring Agency may return the sealed financial proposal earlier if the disqualified or non-responsive Bidder, contractor or consultant submits an affidavit, through an authorized representative, to the effect that he is satisfied with the proceedings of the Procuring Agency”.

vi) The successful Bidder’s Bid security will be discharged upon the Bidder signing the contract, pursuant to ITB Clause 2.6.1, and furnishing the Performance Guarantee, pursuant to ITB Clause 2.6.2.

vii) The Bid security may be forfeited:

a. If a Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Bid Form; or

b. In the case of a successful Bidder, if the Bidder:

i. Fails to sign the contract in accordance with ITB Clause 2.6.3; or

ii. Fails to furnish Performance Guarantee in accordance with ITB Clause 2.6.2; or

iii. If the blacklisting proceedings under Section-17A of PPRA Act, 2009 read with Rule-21 of PPR-14 are initiated and the bidder is declared blacklisted after due process of law.

2.3.8. Period of Validity of Bids

i) Bids shall remain valid for the period specified in the Bid Data Sheet after the date of Bid opening prescribed by the Procuring Agency. A Bid valid for a shorter period may be rejected by the Procuring Agency as non-responsive.

ii) In exceptional circumstances, the Procuring Agency may solicit the Bidder’s consent to an extension of the period of validity (as per rule-28 of PPR-14). The request and the

responses thereto shall be made in writing (or by email). The Bid security provided under ITB Clause 2.3.8 shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid security. A Bidder accepting the request will not be required nor permitted to modify its Bid.

2.3.9. Format and Signing of Bid

- i) The Bidder shall prepare an original and the number of copies of the Bid indicated in the Bid Data Sheet, clearly marking each "ORIGINAL BID" and "COPY OF BID," as appropriate. In the event of any discrepancy between them, the original shall prevail.
- ii) The Bidder shall authorize a person/ persons for signing, submission and further correspondence with Procuring Agency on behalf of bidder. Authority letter must be part of bid. However, in case of any issue bidder shall be responsible for all consequences.
- iii) The original and the copy or copies of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized to bind the Bidder to the contract. All pages of the Bid, shall be signed and stamped by the authorized person.
- iv) Any interlineation, erasures, or overwriting shall be valid only if they are initialed by the authorized person for signing the Bid.
- v) The original and the copy or copies of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the **BDS** and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid, shall be signed and stamped by the authorized person.
- vi) Any interlineations, erasures, or overwriting shall be valid only if they are signed by the person or persons signing the Bidder.
- vii) The Bidder shall furnish information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid to agents relating to this Bid and to contract execution if the Bidder is awarded the contract.

2.4. Submission of Bids

2.4.1 Sealing and

- i) As per Rule 24, the Bidder shall seal the original and each copy

Marking of Bids

of the Bid in separate envelopes, duly marking the envelopes as “ORIGINAL” and “COPY.” The envelopes shall then be sealed in an outer envelope.

- ii) The inner and outer envelopes shall:
 - a. be addressed to the Procuring Agency at the address given in the Bid Data Sheet; and
 - b. bear the title of procurement Activity indicated in the Bid Data Sheet, the Invitation to Bids (ITB) title and number indicated in the Bid Data Sheet, and a statement: “DO NOT OPEN BEFORE..... (time and date),” *[to be completed with the time and the date specified in the Bid Data Sheet, pursuant to ITB Clause 2.4.2.]*
- iii) The inner envelopes shall also indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared “late”.
- iv) If the outer envelope is not sealed and marked as required by ITB Clause 2.4.1 (i), the Procuring Agency will assume no responsibility for the Bid’s misplacement or premature opening.
- v) In case of Single Stage One Envelope Procedure, the Bidder shall seal the original and each copy of the Bid in separate envelopes, duly marking the envelopes as “ORIGINAL” and “COPY.” The envelopes shall then be sealed in an outer envelope securely sealed in such a manner that opening and resealing cannot be achieved undetected.

Note: The envelopes shall be sealed and marked in accordance with the bidding procedure adopted as referred in Rule-38 of PPR-2014, which shall have precedence.
- vi) The inner and outer envelopes shall:
 - a) Be addressed to the Procuring Agency at the address given in the **BDS**; and
 - b) Bear the title of the subject procurement or Project name, as the case may be as indicated in the **BDS**, the Invitation to Bids (ITB) title and number indicated in the **BDS**, and a statement: “DO NOT OPEN BEFORE,” to be completed with the time and the date specified in the **BDS**, pursuant to **ITB 2.4.2.**
- vii) In case of Single Stage Two Envelope Procedure, The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Proposal and the other Financial Proposal. Both envelopes to be enclosed together in an outer single envelope

called the Bid. Each Bidder shall submit his bid as under:

- a) Bidder shall submit his TECHNICAL PROPOSAL and FINANCIAL PROPOSAL in separate inner envelopes and enclosed in a single outer envelope.
- b) ORIGINAL and each copy of the Bid shall be separately sealed and put in separate envelopes and marked as such.
- c) The envelopes containing the ORIGINAL and copies will be put in one sealed envelope and addressed / identified as given in BDS.

viii) The inner and outer envelopes shall:

- a) be addressed to the Procuring Agency at the address provided in the BDS;
- b) bear the name and identification number of the contract as defined in the BDS; and provide a warning not to open before the time and date for bid opening, as specified in the BDS, pursuant to ITB 2.4.2;
- c) In addition to the identification required in Sub- Clause (b) 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 ITB.2.4.3.

ix) If all envelopes are not sealed and marked as required by **ITB 2.4.1** or incorrectly marked, the Procuring Agency will assume no responsibility for the misplacement or premature opening of Bid.

2.4.2 Deadline for Submission of Bids

- i) Bids must be received by the Procuring Agency at the address specified under BDS no later than the time and date specified in the Bid Data Sheet. Bids received through courier services shall not be entertained.
- ii) The Procuring Agency may, at its discretion and as per rule 29 of PPR-14, extend this deadline for the submission of Bids by amending the Bidding documents in accordance with ITB Clause 2.2.2 & 2.2.3 in which case all rights and obligations of the Procuring Agency and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.
- iii) Bids shall be received by the Procuring Agency at the address specified under **BDS** no later than the date and time specified in the **BDS**.

2.4.3. Late Bids

- i) Any Bid received by the Procuring Agency after the deadline for submission of Bids prescribed by the Procuring Agency pursuant to ITB Clause 2.4.2 will be rejected and returned unopened to the Bidder.
- ii) The Procuring Agency shall not consider for evaluation any Bid that arrives after the deadline for submission of Bids.
- iii) Any Bid received by the Procuring Agency after the deadline for submission of Bids shall be declared late, recorded, rejected and returned unopened to the Bidder.

2.4.4. Modification and Withdrawal of Bids

- i) The Bidder may modify or withdraw its Bid after the Bid's submission, provided that written notice of the modification, including substitution or withdrawal of the Bids, is received by the Procuring Agency prior to the deadline prescribed for submission of Bids.
- ii) The Bidder's modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of Clause (i) A withdrawal notice may also be sent by email, but followed by a signed confirmation copy, postmarked not later than the deadline for submission of Bids.
- iii) No Bid may be modified after the deadline for submission of Bids.
- iv) No Bid may be withdrawn in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Bid Form. Withdrawal of a Bid during this interval may result in the Bidder's forfeiture of its Bid security (along with other remedies available under PPR-14), pursuant to the ITB Clause 2.3.8 (vii).
- v) A Bidder may withdraw its Bid after it has been submitted, provided that written notice of the withdrawal of the Bid, is received by the Procuring Agency prior to the deadline for submission of Bids.
- vi) Revised bid may be submitted after the withdrawal of the original bid before the deadline for submission of Bids.

2.5. Opening and Evaluation of Bids

2.5.1. Opening of Bids by the Procuring Agency

- i) The Procuring Agency will open all Bids, in public, in the presence of Bidders' or their representatives who choose to attend, and other parties with a legitimate interest in the Bid proceedings at the place, on the date and at the time,

specified in the **BDS**. The Bidders' representatives present shall sign a register/attendance sheet as proof of their attendance.

- ii) First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding Withdrawal Notice contains a valid authorization to request the withdrawal and is read out at bid opening.
- iii) Second, outer envelopes marked "SUBSTITUTION" shall be opened. The inner envelopes containing the Substitution Bid shall be exchanged for the corresponding Original Bid being substituted, which is to be returned to the Bidder unopened. No envelope shall be substituted unless the corresponding Substitution Notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.
- iv) Next, outer envelopes marked "MODIFICATION" shall be opened. No Technical Proposal and/or Financial Proposal shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at the opening of the Bids. Any Modification shall be read out along with the Original Bid except in case of Single Stage Two Envelope Procedure where only the Technical Proposal, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Financial Proposal, both Original and Modification, will remain unopened till the prescribed financial bid opening date.
- v) Other envelopes holding the Bids shall be opened one at a time, in case of Single Stage One Envelope Procedure, the Bidders names, the Bid prices, the total amount of each Bid, the presence or absence of Bid Security, Bid Securing Declaration and such other details as the Procuring Agency may consider appropriate, will be announced by the Procurement Evaluation Committee.
- vi) In case of Single Stage Two Envelope Procedure, the Procuring Agency will open the Technical Proposals in public at the address, date and time specified in the **BDS** in the presence of Bidders' designated representatives who choose to attend and other parties with a legitimate interest in the Bid proceedings. The Financial Proposals will remain unopened and will be held in custody of the Procuring Agency until the specified time of their opening.

vii) The envelopes holding the Technical Proposals shall be opened one at a time, and the following read out and recorded: (a) the name of the Bidder; (b) the presence of a Bid Security, if required; and (c) Any other details as the Procuring Agency may consider appropriate.

viii) Bidders are advised to send in a representative with the knowledge of the content of the Bid who shall verify the information read out from the submitted documents. Failure to send a representative or to point out any un-read information by the sent Bidder's representative shall indemnify the Procuring Agency against any claim or failure to read out the correct information contained in the Bidder's Bid.

ix) No Bid will be rejected at the time of Bid opening except for late Bids which will be returned unopened to the Bidder, pursuant to **2.4.3 (i)**.

x) The Procuring Agency shall prepare minutes of the Bid opening. The record of the Bid opening shall include, as a minimum: the name of the Bidder and whether or not there is a withdrawal, substitution or modification, the Bid price if applicable.

xi) The Bidders' representatives who are present shall be requested to sign on the attendance sheet. The omission of a Bidder's signature on the record shall not invalidate the contents and affect the record.

xii) Minutes of the Financial Bid Opening shall be recorded and uploaded by the procuring agency on its website or shared to all bidders through e-mail.

[if Procuring Agency opts for single stage one envelope procedure as per rule 38(1) of PPR-14, clause (vi) to (xiii) should be formulated accordingly by the procuring agency.]

**2.5.2.
Confidentiality**

i) Information relating to the examination, clarification, evaluation and comparison of Bids and recommendation of contract award shall not be disclosed to Bidders or any other persons not officially concerned with such process until the time of the announcement of the respective evaluation report in accordance with the requirements of rule 37 of PPR-14.

ii) Any effort by a Bidder to influence the Procuring Agency processing of Bids or award decisions may result in the

rejection of its Bid.

iii) Notwithstanding **ITB Clause 2.2.2** from the time of Bid opening to the time of contract award, if any Bidder wishes to contact the Procuring Agency on any matter related to the Bidding process, it should do so in writing or in electronic forms that provides record of the content of communication.

2.5.3. Clarification of Bids

i) As per rule 33(2) of PPR-14, to assist in the examination, evaluation and comparison of Bids and post-qualification of the Bidders, the Procuring Agency may, at its discretion, ask any Bidder for a clarification of its Bid including breakdown of prices to determine its reasonability. Any clarification submitted by a Bidder that is not in response to a request by the Procuring Agency shall not be considered.

ii) The request for clarification and the response shall be in writing or in electronic forms that provide record of the content of communication. In case of Single Stage Two Envelope Procedure, no change in the prices or substance of the Bid shall be sought, offered, or permitted. Whereas in case of Single Stage One Envelope Procedure, only the correction of arithmetic errors discovered by the Procuring Agency in the evaluation of Bids should be sought in accordance with ITB Clause 2.5.6.

iii) The alteration or modification in The Bid which in any way affect the following parameters will be considered as a change in the substance of a bid:

- a) Evaluation & qualification criteria;
- b) Required scope of work or specifications;
- c) All securities requirements;
- d) Tax requirements;
- e) Terms and conditions of bidding documents.
- f) Change in the ranking of the Bidder

iv) From the time of Bid opening to the time of Contract award if any Bidder wishes to contact the Procuring Agency on any matter related to the Bid it should do so in writing or in electronic forms that provide record of the content of communication.

2.5.4. Preliminary Examination

i) The Procuring Agency will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order.

- ii) Arithmetical errors will be rectified on the following basis:-
 - a. If there is a discrepancy between the unit price and the 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 the Supplier does not accept the correction of the errors, its Bid may be rejected, and its Bid security may be forfeited.
 - b. If there is a discrepancy between words and figures, the amount in words will prevail.
- iii) Prior to the detailed evaluation, the Procuring Agency will determine the responsiveness of each Bid to the Bidding documents, pursuant to ITB Clause 2.5.5. For purposes of these Clauses, a responsive Bid is one which conforms to all the terms and conditions of the Bidding documents without material deviations. Deviations from, or objections or reservations to critical provisions, **such as** those concerning **Bid Security** (ITB Clause 2.3.8), **Applicable Law** (GCC Clause 30), **Taxes and Duties** (GCC Clause 32) & mandatory Registrations/ Renewals will be deemed to be a material deviation. The Procuring Agency's determination of a Bid's responsiveness is to be based on the contents of the Bid itself without recourse to extrinsic evidence.
- iv) If a Bid is not responsive, it will be rejected by the Procuring Agency and may not subsequently be made responsive by the Bidder by correction of the non-conformity.
- v) Prior to the detailed evaluation of Bids, the Procuring Agency will determine whether each Bid:
 - a) Meets the eligibility criteria defined in **ITB 2.1.3** and **ITB 2.1.4**;
 - b) Has been prepared as per the format and contents defined by the Procuring Agency in the Bidding Documents;
 - c) Has been properly signed;
 - d) Is accompanied by the required securities; and
 - e) Is responsive to the requirements of the Bidding Documents.

The Procuring Agency's determination of a Bid's responsiveness will be based on the contents of the Bid itself.

2.5.5. Examination of Terms and Conditions;

- i) The Procuring Agency shall examine the Bid to confirm that all terms and conditions specified in the **GCC** and the **SCC** have been accepted by the Bidder without any material

**Technical
Evaluation**

deviation or reservation.

- ii) The Procuring Agency shall evaluate the technical aspects of the Bid submitted to confirm that all requirements specified in **Section III-Technical Specifications, Section VII – Schedule of Requirements & Evaluation Criteria as provided in BDS**, have been met without material deviation or reservation.
- iii) If after the examination of the terms and conditions and the technical evaluation, the Procuring Agency determines that the Bid is not responsive in accordance, it shall reject the Bid.

**2.5.6. Correction of
Errors**

- i) Bids determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows: -
 - a) If there is a discrepancy between unit prices and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected, unless in the opinion of the Procuring Agency there is an obvious misplacement of the decimal point in the unit price, in which the total price as quoted shall govern and the unit price shall be corrected;
 - b) If there is an error in a total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail and the total shall be corrected; and
 - c) Where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.
 - d) Where there is discrepancy between grand total of price schedule and amount mentioned on the Form of Bid, the amount referred in Price Schedule shall be treated as correct subject to elimination of other errors.
- ii) The amount stated in the Bid will, be adjusted by the Procuring Agency in accordance with the above procedure for the correction of errors. The concurrence of the Bidder shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, its Bid will then be rejected, and the Bid Security may be forfeited or the Bid Securing Declaration may be executed in accordance with **ITB 2.3.8.**

**2.5.7. Conversion
to Single Currency**

- i) As per rule 32(2) of PPR-14, to facilitate evaluation and comparison, the Procuring Agency will convert all Bid prices expressed in the amounts in various currencies in which the Bid prices as follows:

For the purposes of comparison of bids quoted in different currencies, the price shall be converted into a single currency

specified in the bidding documents. The rate of exchange shall be the selling rate, prevailing on the date of opening of bids specified in the bidding documents, as notified by the State Bank of Pakistan on that day, in case of holiday in State Bank of Pakistan on the day of opening financial bids, then previous working day's ex-change rates will prevail.

2.5.8. Post-Qualification & Evaluation of Bids

- i) In the absence of **prequalification**, the Procuring Agency will determine to its satisfaction whether the Bidder is qualified to perform the contract satisfactorily, in accordance with the evaluation criteria listed in BDS & pursuant to ITB Clause 2.1.3.
- ii) The determination will take into account the Bidder's financial, technical, and production/ supplying capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB Clause 2.3.6, as well as such other information required for eligibility/qualification expressed in Bid Data Sheet as the Procuring Agency deems necessary and appropriate.
- iii) The Procuring Agency will **technically evaluate** and compare the Bids which have been determined to be responsive, pursuant to ITB Clause 2.5.5, as per Technical Specifications required.
- iv) The **financial evaluation** of a Bid will be on the basis of form of Price Schedules/ Financial Bid Form 8.10 to be decided by the Procuring Agency which must include clear cut instruction regarding item wise or package wise evaluation inclusive of prevailing taxes, duties, fees etc.

2.5.9. Contacting the Procuring Agency

- i) Subject to ITB Clause 2.5.3, no Bidder shall contact the Procuring Agency on any matter relating to its Bid, from the time of the Bid opening to the time the evaluation report is made public i.e. 10 days before the contract is awarded. If the Bidder wishes to bring additional information or has grievance to the notice of the Procuring Agency, it should do so in writing.
- ii) Any effort by a Bidder to influence the Procuring Agency during Bid evaluation, or Bid comparison may result in the rejection of the Bidder's Bid.

2.5.10. Grievance Redressal

- i) As per Rule-67 of PPR-14, Procuring Agency shall constitute a Grievance Redressed Committee (GRC) comprising of odd

number of persons with proper powers and authorization to address the complaints. The GRC shall not have any of the members of the Procurement Evaluation Committee. The Committee may preferably have one subject specialist depending upon the nature of the procurement in addition to one person with legal background as per their availability to the Procuring Agency.

- ii) Any Bidder feeling aggrieved can file its written complaint against the eligibility parameters or any other terms and conditions prescribed in the Bidding documents found contrary to provision of Rule 33, and the same shall be addressed by the Procuring Agency well before the proposal submission deadline.
- iii) Any party can file its written complaint against the eligibility parameters or any other terms and conditions prescribed in the bidding documents found contrary to provision of Rule 34 and the same shall be addressed by the Procuring Agency well before the proposal submission deadline.
- iv) Any Bidder feeling aggrieved by any act of the Procuring Agency after the submission of his Bid may lodge a written complaint concerning his grievances not later than ten days after the announcement of the Final evaluation reports. In case of single stage - two envelope bidding procedure any bidder feeling aggrieved from technical evaluation may file a grievance within 5 days of announcement of the technical evaluation report. After completion of the technical evaluation process, the procuring agency shall immediately upload the technical evaluation report on the website of PPRA and Procuring Agency for obtaining/ receiving grievance petitions from the prospective bidders (if any).
- v) In case, the complaint/grievance is filed after the issuance of the final evaluation report, the complainant cannot raise any objection on technical evaluation of the report. Provided that the complainant may raise the objection on any part of the final evaluation report in case where single stage one envelop bidding procedure is adopted.
- vi) The GRC shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint. Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.

2.6. Award of Contract

2.6.1. Notification of Award

- i) Prior to the expiration of the period of Bid validity, the Procuring Agency will notify the successful Bidder in writing by registered letter and by email to be confirmed in writing by registered letter, that its Bid has been accepted.
- ii) The notification of award will constitute the formation of the Contract.
- iii) Upon the successful Bidder's furnishing of the Performance Guarantee pursuant to ITB Clause 2.6.2 (i), the Procuring Agency will promptly notify each unsuccessful Bidder and will discharge its Bid security, pursuant to ITB Clause 2.3.8 (v).

2.6.2. Performance Guarantee

- i) Within fifteen (15) *[to be decided by the procuring agency]* days of the receipt of notification of award from the Procuring Agency, the successful Bidder shall furnish the Performance Guarantee in accordance with the Conditions of Contract, in the Performance Guarantee Form provided in the Bidding documents, or in another form acceptable to the Procuring Agency.
- ii) Failure of the successful Bidder to comply with the requirement of ITB Clause (i) above or ITB Clause 2.6.3 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid security along with other remedies available under PPR-14. After that, the Procuring Agency may decide to award the contract to the next lowest evaluated Bidder, keeping in view the Bid validity time, or call for new Bids keeping in view the concept of value for money as defined under rule-2(ae) read with Principles of Procurement as enunciated in rule-4 of PPR-14.

2.6.3. Signing of Contract/ Issuance of Purchase Order

- i) At the same time as the Procuring Agency notifies the successful Bidder that its Bid has been accepted, the Procuring Agency will send the Bidder the Contract Form provided in the Bidding documents, incorporating all agreements between the parties or will issue the purchase order *[as the case may be]*.
- ii) Under rule-63 of PPR-14, where the Procuring Agency requires formal signing of contract, within seven (07) days of receipt of the Contract Form, the successful Bidder shall sign and mention date of the contract and return it to the Procuring Agency.
- iii) Where no such formal signing is required by the procuring agency, the procuring agency shall issue purchase order after

the receipt of required performance guarantee, as per rule 55 of PPR-14.

**2.6.4. Award
Criteria**

- i) Subject to ITB Clause 2.6.2, under rule-55 of PPR-14, the Procuring Agency will award the contract to the successful Bidder whose Bid has been determined to be responsive and has been determined to be the lowest evaluated Bid, provided that the Bidder has been determined to be qualified to perform the contract satisfactorily.

**2.6.5. Procuring
Agency's Right to
Vary Quantities at
Time of Award**

- i) The Procuring Agency reserves the right at the time of contract award to increase or decrease the quantity of goods and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions, on the analogy of rule-59 (c)(iv) of PPR-14 (not more than 15%).

**2.6.6. Procuring
Agency's Right to
Accept or Reject
All Bids**

- i) As per rule 35 of PPR-14, the Procuring Agency reserves the right to accept or reject all Bids or proposals (and to annul the Bidding process) at any time prior to the acceptance of any Bid or proposal, without thereby incurring any liability towards the Bidders.
- ii) The Bidders shall be promptly informed about the rejection of the Bids, if any
- iii) The Procuring Agency shall upon request communicate to any Bidder, the grounds for its rejection of all Bids or proposals, but shall not be required to justify those grounds.

2.6.7. Re-Bidding

- i) If the Procuring Agency rejects all the Bids under rule 35, it may proceed with the process of fresh Bidding but before doing that it shall assess the reasons for rejection and may, if necessary, revise specifications, evaluation criteria or any other condition for Bidders.

2.6.8. Corrupt or Fraudulent Practices

- i) The Procuring Agency Bidders, Suppliers, and Contractors observe the highest standard of ethics during the procurement and execution of contracts.

“Corrupt practices” in respect of procurement process, shall be as given in S-2 (d) of PPRA, Act, 2009, which is as follows:

“(d) “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official, bidder or Contractor in the procurement process or in Contract execution to the detriment of the procuring agency; or misrepresentation of facts in order to influence a procurement process or the execution of a Contract, collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial, noncompetitive levels and to deprive the procuring agency of the benefits of free and open competition and any request for, or solicitation of anything of value by any public official in the course of the exercise of his duty; it may include any of the following:

- i. Coercive practice by impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence the actions of a party to achieve a wrongful gain or to cause a wrongful loss to another party;*
- ii. Collusive practice by arrangement between two or more parties to the procurement process or Contract execution, designed to achieve with or without the knowledge of the procuring agency to establish prices at artificial, noncompetitive levels for any wrongful gain;*
- iii. Offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the acts of another party for wrongful gain;*
- iv. Any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;*
- v. Obstructive practice by harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process, or affect the execution of a Contract or deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements before investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the*

investigation or from pursuing the investigation, or acts intended to materially impede the exercise of inspection and audit process.”

ii) Blacklisting & Debarment:

Blacklisted Bidders i.e. firms/companies/sole proprietor/ general order suppliers/ JVs etc. and those found involved in “Corrupt Practices” are not allowed to participate in bidding.

Requirements & Procedure for Blacklisting & Debarment:

As per S-17A of PPRA, Act, 2009:

“17A. Blacklisting.– (1) *A procuring agency may, for a specified period and in the prescribed manner, debar a bidder or Contractor from participating in any public procurement process of the procuring agency, if the bidder or Contractor indulges in corrupt practice or any other prescribed practice.*

(2) *The Managing Director may, in the prescribed manner, debar a bidder or Contractor from participating in any public procurement process of all or some of the procuring agencies for a specified period.*

(3) *Any person, aggrieved from a decision of a procuring agency, may within prescribed period prefer a representation before the Managing Director.*

(4) *A procuring agency or any other person, aggrieved from a decision of the Managing Director, may within prescribed period prefer a representation before the Chairperson whose decision on such representation shall be final.]*

As per rule 21 of PPR-14:

21. Blacklisting.–(1) *A procuring agency may, for a specified period, debar a bidder or Contractor from participating in any public procurement process of the procuring agency, if the bidder or Contractor has:*

(a) *acted in a manner detrimental to the public interest or good practices;*

(b) *consistently failed to perform his obligation under the Contract;*

(c) *not performed the Contract up to the mark; or*

(d) *indulged in any corrupt practice.*

(2) *If a procuring agency debars a bidder or Contractor under sub-rule (1), the procuring agency:*

(a) shall forward the decision to the Authority for publication on the website of the Authority; and

(b) may request the Authority to debar the bidder or Contractor for procurement of all procuring agencies.

(3) The Managing Director may debar a bidder or Contractor of any procuring agency from participating in any public procurement process of all or some of the procuring agencies for such period as the Managing Director may determine.

(4) Any person aggrieved by a declaration made under rule 20 or a decision under sub-rule (1) of this rule may, within thirty days from the date of the publication of the information on the website of the Authority, file a representation before the Managing Director and the Managing Director may pass such order on the representation as he may deem fit.

(5) Any person or procuring agency aggrieved by an order under sub-rule (3) or (4) may, within thirty days of the order, file a representation before the Chairperson and the Chairperson may pass such order on the representation as he may deem appropriate.

(6) The mechanism or process for barring a bidder or Contractor from participating in procurement process of a procuring agency, procuring agencies and a representation under this rule is specified in the Schedule appended to these rules.

As per Schedule appended with PPR-14:

SCHEDULE

see sub-rule (6) of rule 21

BLACKLISTING MECHANISM OR PROCESS

1. *The procuring agency may, on information received from any resource, issue show cause notice to a bidder or Contractor.*
2. *The show cause notice shall contain:*
 - (a) precise allegation, against the bidder or Contractor;*
 - (b) the maximum period for which the procuring agency proposes to debar the bidder or Contractor from participating in any public procurement of the procuring agency; and*
 - (c) the statement, if needed, about the intention of the procuring agency to make a request to the Authority for debarring the bidder or Contractor from participating in public procurements of all the procuring agencies.*
3. *The procuring agency shall give minimum of seven days to the bidder or Contractor for submission of written reply of the show cause notice.*
4. *In case, the bidder or Contractor fails to submit written reply*

within the requisite time, the procuring agency may issue notice for personal hearing to the bidder or Contractor/ authorize representative of the bidder or Contractor and the procuring agency shall decide the matter on the basis of available record and personal hearing, if available.

5. *In case the bidder or Contractor submits written reply of the show cause notice, the procuring agency may decide to file the matter or direct issuance of a notice to the bidder or Contractor for personal hearing.*
6. *The procuring agency shall give minimum of seven days to the bidder or Contractor for appearance before the specified officer of the procuring agency for personal hearing.*
7. *The procuring agency shall decide the matter on the basis of the available record and personal hearing of the bidder or Contractor, if available.*
8. *The procuring agency shall decide the matter within fifteen days from the date of personal hearing unless the personal hearing is adjourned to a next date and in such an eventuality, the period of personal hearing shall be reckoned from the last date of personal hearing.*
9. *The procuring agency shall communicate to the bidder or Contractor the order of debaring the bidder or Contractor from participating in any public procurement with a statement that the bidder or Contractor may, within thirty days, prefer a representation against the order before the Managing Director of the Authority.*
10. *The procuring agency shall, as soon as possible, communicate the order of blacklisting to the Authority with the request to upload the information on its website.*
11. *If the procuring agency wants the Authority to debar the bidder or Contractor from participating in any public procurement of all procuring agencies, the procuring agency shall specify reasons for such dispensation.*
12. *The Authority shall immediately publish the information and decision of blacklisting on its website.*
13. *In case of request of a procuring agency under para 11 or representation of any aggrieved person under rule 21, the Managing Director shall issue a notice for personal hearing to the parties and call for record of proceedings of blacklisting. The parties may file written statements and documents in support of their contentions.*
14. *In case of representation of any aggrieved person or procuring agency under rule 21, the Chairperson shall issue a notice for personal hearing to the parties and may call for the record of the proceedings. The parties may file written*

statements and documents in support of their contentions.

15. *In every order of blacklisting under rule 21, the procuring agency shall record reasons of blacklisting and also reasons for short, long or medium period of blacklisting.*
16. *The Authority shall upload all the decisions under rule 21, available with it, on its website. But the name of a bidder or Contractor shall immediately be removed from the list of blacklisted persons on expiry of period of blacklisting or order of the competent authority to that effect, whichever is earlier.*
17. *An effort shall be made for electronic communication of all the notices and other documents pursuant to this mechanism or process.”*

iii) Furthermore, Bidders must keep themselves aware of the provision stated in clause 5.4 and clause 24.1 of the General Conditions of Contract.

2.6.9. Quantity and volume of the goods to be considered in mind
[Framework Contract Modality]

- i) While quoting the rate in a framework contract, the Bidder must consider the following facts:
 - a. Certain volume and quantity of the goods as prescribed in Bid Data Sheet.
 - b. The Bidder have to maintain the rates of the goods for the whole financial year.
 - c. The Bidder should quote the rate as per Price Schedule/ Financial Bid form. In case of non-observance of prescribed format, Financial Bid may be rejected.

3.1. Technical Specifications

Solar Equipment – Administration Block & VC Secretariat

Active Equipment			
1.	Grid-Tied PV String Inverter	02	<p>HUAWEI / SOLIS/ GOODWE OR Equivalent</p> <p>Inverter Rated Capacity 115 KW OR Higher Number of MPPT's / String Inputs: 8 / 10 Max Efficiency P.F > 98.5 % @ 400V OR Higher Start / MPPT range: 195 V / 195 –1000 V Communication: RS485, Wi-Fi, PLC Ingress Protection: IP65/IP66(complete enclosure, outdoor-rated) AFCI/Reverse Protection: Yes Anti-PID Function: Yes Type: Three phase PF Range / THDi: 0.8 lead, 0.8 lag <3% Surge Protection: DC Type II + AC Type II Smart PV Management Compatibility: Yes Data Logger: Yes Certifications & Compliance: IEC/EN 62109-1/-2 (safety), IEC 62116 (anti-islanding), IEC 61727 (grid interface), EN 50549-1/-2 or equivalent Warranty: 5 Years Replacement Warranty and onsite parts replacement and installation.</p>
2.	PV Modules	309	<p>Canadian / JINKO / JA Solar / Trina OR Equivalent</p> <p>Technology: High-performance N-Type bifacial solar module with PERC and half-cut cell Technology, designed for industrial and utility-scale installations with superior energy yield, low degradation, and high efficiency Power Output (Pmax): 615 W+ upto 640 Watts Maximum Efficiency: 21.5% OR Higher Voc / Isc: ~50V / ~15A Vmp / Imp: ~42V / ~14.7A Cell Type: 210 mm Mono PERC / N-Type / Topcon Bifaciality: Bifacial, Dual Glass Bifacial Gain: 25% Or Higher Size / Weight: ~2278 × 1134 × 30mm / ~31 kg Glass: Dual-glass, 2.0mm tempered, AR-coated Frame: Anodized Aluminum Alloy Junction Box: IP68 Certifications & Ratings: IEC 61215 / IEC 61730 / IEC 61701 / IEC 62716 Max System Voltage: 1500V DC Performance: 30 Years Linear or higher ≤1% degradation in year 1, ≤0.4% annually ≥87.4% power at year 30 Temperature Co-efficient: -0.29%/°C Global Tier-1 (BNEF): Yes Light Induced Degradation ≤ 0.5% power loss after light stabilization Potential Induced Degradation: ≤ 1.0% power loss after 96 h at 85 °C / 85% RH under ±1000 V bias ≤ 2.0% power loss after 600 h (extended PID stress) IEC 62804-1 (system voltage stress, Method A) Low Light & High Temperature Performance:</p>

			<p>≥97% relative efficiency at 200 W/m² irradiance under STC spectrum Nominal Operating Cell Temperature (NOCT): 800 W/m², 20 °C ambient, 1 m/s wind), ≥80% of rated STC power output.</p> <p>Product Warranty: 15 Years</p> <p>Performance Warranty: 30 Years Linear onsite replacement and installation.</p>
3.	Rawal Bolts	930	<p>Brand Power or Equivalent Through pre-drilled holes in legs foots, tightened with washers and nuts Galvanized Steel. Diameter: 8 mm Length: 2.5”</p>
4.	Fasteners	1500 pairs	<p>SS 304/316 With Spring Washer M8 / M10 / M12 (as needed)</p>
5.	Washers	3000 Pcs	<p>Zinc Plated Galvanized steel – Rectangle Washers 14 Gauge 1” X 2”</p>
6.	Rawal Bolt Washer	930 Pcs	<p>Mild Steel Zinc Plated As per rawal bolt size</p>
7.	Rawal Bolt Compound	5 sets	<p>Brands: Crystal / Magic OR Equivalent Resin : Hardener Mix Ratio: 1:1</p>
8.	Ground Mounted Structure – L2	155 Sets	<p>L2 Pro Series - Galvanized Structure For Complete System Size: 190 KW as per 615W–640W Modules Tilt Angle: Minimum 15° OR Higher Design Life: 25 – 30 Years Wind bearing design & structure for winds upto 150km/h or higher.</p> <p>Structure Specifications:</p> <ul style="list-style-type: none"> • Round L- Type Elevated Base Foots. • Module Mounting Rails (Top Rails). • SS 304 Nuts & Bolts with Washers For assembly & fixing of all GI members. • All cut edges of structure members should be treated with paint layers to restore corrosion protection lost during cutting. • Minimum of one coat of paint shall be applied on all exposed and cut edges to enhance the overall durability, service life and

			structural integrity of installed ground mounted pro type L2 structure.
Passive Equipment / Work - Administration Block & VC Secretariat			
1.	DC Cable – 4mm²	3500 mtr	<p>Fast Cables / Pakistan Cables / CopperGate Cables OR Equivalent</p> <p>Size: 4.0 mm² & 6.0 mm² Material Type: Single core, copper (CU) with PVC insulation Voltage Rating: 750V Current Rating: 32A (At 30°C ambient temperature) Conductor: Flexible, stranded copper Insulation: XLPO / XLPOAT 1500VDC Standards: BS EN 60228, BS 6004, IEC 60332-1 Operating Temperature: 90°C Bending Radius: 14mm (minimum) Overall Diameter (Approx.): 3.80-4.60mm Coil Length: 450 meters (coil size). Suitable for: DC applications, including solar power systems.</p>
2.	DC MCB – 4 Pole	30	<p>CHINT / MORA / TOMZN / ETEK OR Equivalent</p> <p>1000V DC – 25A/32A, 4-Pole Polarity: Bidirectional handles positive and negative lines. Arc Quenching: Built-in arc extinguishing chamber for safe DC disconnection. Material: Flame-retardant, high-strength thermoplastic casing. Standards: IEC, CE, Or Equivalent.</p>
3.	DC SPD - 3 Pole	30	<p>NOARK / ETEK OR Equivalent</p> <p>Class T1+T2 , 3-Pole DC 1200 – 1500V DC Poles: 3-Pole Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): Up to 40 kA Protection Mode: Common mode and differential mode Response Time: < 25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
4.	Multi Connectors	20 pairs	<p>HK / MORA / TOMZN</p> <p>1000–1500V DC</p>

			UV-resistant plastic with copper-tinned contacts
5.	DC & AC DB	02	<p>Mild Steel – 16 Gauge – Powder Coated DB Box</p> <p>Enclosure: weatherproof powder coated GI or polycarbonate SIZE: 3’ X 4’ X 10” (H X W X D)</p> <p>DBs shall be designed and sized to accommodate the following equipment:</p> <ul style="list-style-type: none"> • Miniature Circuit Breakers (MCBs) • Molded Case Circuit Breakers (MCCBs) • Surge Protection Devices (SPDs) – DC Side • Terminal Blocks • Cable Gland Fittings • External Segments for AC SPD’s Placement.
6.	AC Cable 95 mm ² 4 Core	800 ft	<p>GM Cables / Fast Cables / Pakistan Cables Or Equivalent</p> <p>Type: XLPE Insulated, PVC Sheathed, Copper Conductor Conductor: High-conductivity annealed copper Cross Section: 120 mm², 4 Core (Three phase + Neutral) Voltage Rating: 0.6/1 kV (600/1000V AC) Insulation: XLPE (Cross-linked Polyethylene) for high thermal endurance Sheath: UV- and weather-resistant PVC outer sheath Copper cable for AC output connection from inverters to LT panels</p>
7.	AC MCCB	04	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Current Rating: 250A Type: 4 Pole Voltage: 400V AC Breaking Capacity: 25kA – 50kA Standards: IEC 60947-2</p>
8.	AC SPD - 4 Pole	04	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Type: Type II SPD (AC side protection) Configuration: 4-Pole (L1, L2, L3, N) Nominal Voltage: 230/440V AC Maximum Continuous Operating Voltage (Uc): 275V–385V AC Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): 60 kA</p>

			<p>Response Time: <25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
9.	Cable Ties	5 packs	<p>KSS OR Equivalent</p> <p>Material: UV-stabilized Nylon 66 (Polyamide)</p> <p>Length: 9”</p> <p>Width: 4.8 mm</p> <p>optional sizes available</p> <p>Tensile Strength: ~22 kg (50 lbs.)</p> <p>Color: UV Black/White (outdoor grade)</p> <p>For neat bundling and securing of DC/AC cables. Suitable for outdoor use in solar structures due to UV resistance</p>
10.	Stainless Steel Cable Ties	2 packs	<p>Material: SS304 or SS316 (corrosion-resistant stainless steel)</p> <p>Length: 8” / 12”</p> <p>Width: 4.6 mm / 7.9 mm (standard sizes)</p> <p>Thickness: ~0.25 mm</p> <p>Temperature Resistance: –80°C to +538°C</p> <p>Locking Type: Self-locking ball-bearing mechanism.</p>
11.	Cable Silver Glands	10 Pcs	<p>Type: Weatherproof, Double Compression</p> <p>Material Options: Brass (Nickel-Silver)– preferred for outdoor & heavy-duty use</p> <p>Ingress Protection: IP65 / IP66 / IP67</p> <p>Cable Size Range: PG7 to PG48 or M12 to M63</p> <p>Thread Types: PG</p> <p>Temperature Resistance: –40°C to +100°C</p> <p>Clamping Range: Tight, secure grip on various cable diameters</p> <p>Features: UV resistant (outdoor use)</p> <p>Flame retardant and oil-resistant</p> <p>Strain relief and seal against dust and water</p> <p>Entry points of solar junction boxes, ACDB/DCDB, inverter enclosures, and panels.</p>
12.	GI Cable Duct	1500 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 2 inch × 2 inch (Width × Height)</p> <p>Duct Sheet Thickness: 18 Gauge (~1.2 mm)</p> <p>Duct Cover Thickness: 20 Gauge (~0.9 mm)</p>

			<p>Length: Standard 8 ft to 10 ft</p> <p>Construction:</p> <p>Ventilated or solid bottom</p> <p>Detachable top cover for easy cable access</p> <p>Sharp edge-free bends for cable safety</p> <p>Electro-galvanized Mounted using GI brackets, clamps, or supports on solar structure or rooftop surface.</p>
13.	GI Cable Duct	500 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 3 inch × 6 inch (Width × Height)</p> <p>Duct Sheet Thickness: 18 Gauge (~1.2 mm)</p> <p>Duct Cover Thickness: 20 Gauge (~0.9 mm)</p> <p>Length: Standard 8 ft to 10 ft</p>
14.	GI Cable Duct	200 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 4 inch × 6 inch</p> <p>Duct Sheet Thickness: 18 Gauge (~1.2 mm)</p> <p>Duct Cover Thickness: 20 Gauge (~0.9 mm)</p> <p>Length: Standard 8 ft to 10 ft</p>
15.	Stainless Steel Conduits	800 ft	<p>1" Stainless Steel Conduit Pipe</p> <p>Material: Stainless Steel</p> <p>Outer Diameter: 1 inch (≈ 25 mm)</p> <p>Wall Thickness: Schedule 40 or 80 (as required)</p>
16.	Metal Flexible Conduit Pipe	780 ft	<p>Type: Galvanized Steel Flexible Conduit</p> <p>Size: 1" – 2"</p> <p>Material: Hot-dip galvanized steel strip, helical wound</p> <p>Inner Diameter: 19 mm to 50 mm depending on size</p> <p>Coating: PVC-coated for additional weather resistance</p> <p>Bending Radius: Tight and flexible for easy routing</p> <p>Temperature Resistance: –20°C to +100°C</p> <p>Ingress Protection: IP54–IP65</p> <p>Flame Retardant: Yes (PVC-coated variants)</p>
17.	Installation & Transportation Services	01	<p>Installation scope includes:</p> <ul style="list-style-type: none"> • Mounting of 615W bifacial PV modules on Ground Mounted Structure. • Inverter installation. • DC/AC wiring with trays, ducts, conduits, and glands. • Installation of DC/AC MCBs, SPDs, disconnects • 4 earth bores (100–120 ft) with lightning protection. • Walkways and access platforms for O&M.

			<ul style="list-style-type: none"> • Welding, finishing, and structural alignment. • Safe and insured delivery of all equipment to project site. • Handling of fragile components like bifacial PV modules and inverters. • Transport of long and heavy items like H-beams, C-channels, and ducts. • Use of dedicated vehicles with proper strapping and padding like Cranes, Loaders etc. • Trained staff for loading, unloading, and site coordination. • Route planning for timely and secure delivery • Prevents equipment damage and project delays.
18.	Commissioning & Services	01	<p>Commissioning scope includes:</p> <ul style="list-style-type: none"> • Complete system inspection before energization • Verification of PV module connections and inverter wiring • Testing of DC/AC protection devices (MCBs, SPDs, disconnects) • Insulation resistance and continuity checks for all cables. • Configuration and startup of inverters. • Synchronization with utility grid and protection relay testing. • Performance ratio (PR) testing and output verification. • Monitoring system setup and remote access configuration. • Handover report with complete commissioning documentation • Design, engineering & system layout Planning Technical documentation and drawings Logistics & site coordination • Utility liaison & net metering support • After-sales service and technical assistance • 3 Years after sales service
19.	Net Metering & Processing	01	<p>Net Metering scope includes:</p> <ul style="list-style-type: none"> • Complete Job as per sanction load • Preparation and submission of complete Net-Metering application documents in line with NEPRA Net-Metering Regulations. • Green Meter Application & Demand Notice as per DISCO requirements. • Coordination and facilitation of WAPDA/DISCO technical survey of the plant. • Inclusion of all technical details, single-line diagrams (SLD), equipment certifications, and site layouts. • Issuance of Distribution License, AEDB (Alternative Energy Development Board). • Preparation and execution of agreements with DISCO and GENCO for Net-Metering interconnection. • Arrangement of on-site physical inspection and practical

			<p>checking by DISCO engineers.</p> <ul style="list-style-type: none"> Sanction load to be adjusted and upgraded in coordination with DISCO. Conduct a Load Flow Study for the interconnection point, ensuring compliance with NEPRA Grid Code and stability of the distribution network. Rectification of any observations raised until formal approval is granted. Handover of Net-Metering License issued by AEDB/NEPRA to the client. Successful synchronization of the PV system with the utility grid under the approved sanctioned load.
20.	Earth Bores	04	<p>100 to 120 ft Depth 4 deep-earth bores drilled at strategic points across the site (depending on soil resistivity) Pipe-in-pipe method using corrosion-resistant GI pipe (1.5"), perforated for deep conductivity. Stable earth resistance ≤ 2 ohms as per IEC Standards.</p>
21.	Earth Chemical	02 Gallons	<p>Brand: Marshal OR Equivalent Type: Conductive Gel / Ground Enhancement Material (GEM) Used in all 4 bores with GI pipe electrode for long-term resistance stability.</p>
22.	Lightning Arresters ESE	02	<p>Height and location as per IS 2309 / IEC 62305 lightning protection zone (LPZ) design Down conductors properly clamped and routed to reduce step potential. All connections and joints cad-welded or mechanically fastened for durability</p> <p>ESE Lightning Arrester with $\Delta T = 71\mu s$, providing a protection radius of up to 120 m, mounted on 3m hot dip galvanized mast, complete with chemical Earthing system ($\leq 2 \Omega$). Product Height: 400 mm</p>
23.	Earthing Cables	500 ft	<p>Conductor: 50 mm² high-purity copper (single core, bare) Interconnecting lightning arresters, inverters, and protection boxes to earth pits High conductivity, corrosion resistant and suitable for outdoor burial.</p>
		2500 ft	<p>Conductor: 6 mm² high-purity copper (single core) Interconnecting panel to panel Earthing and protection boxes to earth pits.</p>

			High conductivity, corrosion resistant and suitable for outdoor burial.
24.	Civil Work	620 blocks	<p>For solar PV installations reinforced concrete (RCC) pedestal blocks shall be constructed at base as per requirement to ensure long-term structural stability, wind resistance, and load-bearing capacity. Each concrete pedestal will have the following specifications:</p> <p>Backleg Block Size: 10” x 10“ x 6” (Length x Width x Height) Frontleg Block Size: 10” x 10“ x 3”(Length x Width x Height) (Ground Mounted Structure – 620 Blocks) Material Mix Ratio: 1:3:4 Material: Reinforced cement concrete (RCC) using M20 grade concrete Base Preparation: Compacted soil base with a PCC (Plain Cement Concrete) layer for leveling Purpose: To securely anchor vertical steel pillars of the shed-mounted solar support structure</p>
25.	Genset Monitoring System	01	<p>The EPC Contractor shall provide, install, configure, and commission a Supervisory Control and Data Acquisition (SCADA) System for real-time monitoring, control, and data acquisition of the 190 KW solar PV plant.</p> <p>Monitoring system includes:</p> <ul style="list-style-type: none"> • DSE/DIEF or Equivalent • Data acquisition, performance analytics • Fault detection, and reporting. • Fault and alarm detection • DC and AC voltage & current • Inverter performance • Energy generation (kWh) Monitoring Parameters <ul style="list-style-type: none"> • Compatible with industry-standard inverters and energy meters. • Remote access for system control and monitoring. • Historical data logging and trend analysis

Solar Equipment – STC Building & Guest House

Active Equipment

<p align="center">1.</p>	<p align="center">Grid-Tied PV String Inverter</p>	<p align="center">01</p>	<p>HUAWEI / SOLIS/ GOODWE OR Equivalent Inverter Rated Capacity 115 KW OR Higher Number of MPPT's / String Inputs: 8 / 10 Max Efficiency P.F > 98.5 % @ 400V OR Higher Start / MPPT range: 195 V / 195 –1000 V Communication: RS485, Wi-Fi, PLC Ingress Protection: IP65/IP66(complete enclosure, outdoor-rated) AFCI/Reverse Protection: Yes Anti-PID Function: Yes Type: Three phase PF Range / THDi: 0.8 lead, 0.8 lag <3% Surge Protection: DC Type II + AC Type II Smart PV Management Compatibility: Yes Data Logger: Yes Certifications & Compliance: IEC/EN 62109-1/-2 (safety), IEC 62116 (anti-islanding), IEC 61727 (grid interface), EN 50549-1/-2 or equivalent Warranty: 5 Years Replacement Warranty and onsite parts replacement and installation.</p>
<p align="center">2.</p>	<p align="center">PV Modules</p>	<p align="center">162</p>	<p>Canadian / JINKO / JA Solar / Trina OR Equivalent Technology: High-performance N-Type bifacial solar module with PERC and half-cut cell Technology, designed for industrial and utility-scale installations with superior energy yield, low degradation, and high efficiency Power Output (Pmax): 615 W+ upto 640 Watts Maximum Efficiency: 21.5% OR Higher Voc / Isc: ~50V / ~15A Vmp / Imp: ~42V / ~14.7A Cell Type: 210 mm Mono PERC / N-Type / Topcon Bifaciality: Bifacial, Dual Glass Bifacial Gain: 25% Or Higher Size / Weight: ~2278 × 1134 × 30mm / ~31 kg Glass: Dual-glass, 2.0mm tempered, AR-coated Frame: Anodized Aluminum Alloy Junction Box: IP68 Certifications & Ratings: IEC 61215 / IEC 61730 / IEC 61701 / IEC 62716 Max System Voltage: 1500V DC Performance: 30 Years Linear or higher ≤1% degradation in year 1,</p>

			<p>≤0.4% annually ≥87.4% power at year 30 Temperature Co-efficient: -0.29%/°C Global Tier-1 (BNEF): Yes Light Induced Degradation ≤ 0.5% power loss after light stabilization Potential Induced Degradation: ≤ 1.0% power loss after 96 h at 85 °C / 85% RH under ±1000 V bias ≤ 2.0% power loss after 600 h (extended PID stress) IEC 62804-1 (system voltage stress, Method A) Low Light & High Temperature Performance: ≥97% relative efficiency at 200 W/m² irradiance under STC spectrum Nominal Operating Cell Temperature (NOCT): 800 W/m², 20 °C ambient, 1 m/s wind), ≥80% of rated STC power output.</p> <p>Product Warranty: 15 Years Performance Warranty: 30 Years Linear onsite replacement and installation.</p>
3.	Rawal Bolts	486 Pcs	<p>Brand Power or Equivalent Through pre-drilled holes in legs foots, tightened with washers and nuts Galvanized Steel. Diameter: 8 mm Length: 2.5”</p>
4.	Fasteners	648 pairs	<p>SS 304/316 With Spring Washer M8 / M10 / M12 (as needed)</p>
5.	Washers	648 Pcs	<p>Zinc Plated Galvanized steel – Rectangle Washers 14 Gauge 1” X 2”</p>
6.	Rawal Bolt Washer	486 Pcs	<p>Mild Steel Zinc Plated As per rawal bolt size</p>
7.	Rawal Bolt Compound	2 sets	<p>Brands: Crystal / Magic OR Equivalent Resin : Hardener Mix Ratio: 1:1</p>
8.	Ground Mounted Structure – L2	81 Sets	<p>L2 Pro Series - Galvanized Structure For Complete System Size: 100 KW as per 615W–640W Modules Tilt Angle: Minimum 15° OR Higher Design Life: 25 – 30 Years Wind bearing design & structure for winds upto 150km/h or higher.</p>

			<p>Structure Specifications:</p> <ul style="list-style-type: none"> • Round L- Type Elevated Base Feet. • Module Mounting Rails (Top Rails). • SS 304 Nuts & Bolts with Washers For assembly & fixing of all GI members. • All cut edges of structure members should be treated with paint layers to restore corrosion protection lost during cutting. • Minimum of one coat of paint shall be applied on all exposed and cut edges to enhance the overall durability, service life and structural integrity of installed ground mounted pro type L2 structure.
Passive Equipment / Work - STC Building & Guest House			
1.	DC Cable – 4mm ²	1800 mtr	<p>Fast Cables / Pakistan Cables / CopperGate Cables OR Equivalent</p> <p>Size: 4.0 mm² & 6.0 mm² Material Type: Single core, copper (CU) with PVC insulation Voltage Rating: 750V Current Rating: 32A (At 30°C ambient temperature) Conductor: Flexible, stranded copper Insulation: XLPO / XLPOAT 1500VDC Standards: BS EN 60228, BS 6004, IEC 60332-1 Operating Temperature: 90°C Bending Radius: 14mm (minimum) Overall Diameter (Approx.): 3.80-4.60mm Coil Length: 450 meters (coil size). Suitable for: DC applications, including solar power systems.</p>
2.	DC MCB – 4 Pole	18	<p>CHINT / MORA / TOMZN / ETEK OR Equivalent</p> <p>1000V DC – 25A/32A, 4-Pole Polarity: Bidirectional handles positive and negative lines. Arc Quenching: Built-in arc extinguishing chamber for safe DC disconnection. Material: Flame-retardant, high-strength thermoplastic casing. Standards: IEC, CE, Or Equivalent.</p>
3.	DC SPD - 3 Pole	18	<p>NOARK / ETEK OR Equivalent</p> <p>Class T1+T2 , 3-Pole DC 1200 – 1500V DC Poles: 3-Pole Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): Up to 40 kA Protection Mode: Common mode and differential mode Response Time: < 25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> • UKCA • VDE • TUV Rhineland

			<ul style="list-style-type: none"> • CE OR Equivalent
4.	Multi Connectors	5 pairs	HK / MORA / TOMZN 1000–1500V DC UV-resistant plastic with copper-tinned contacts
5.	DC & AC DB	01	Mild Steel – 16 Gauge – Powder Coated DB Box Enclosure: weatherproof powder coated GI or polycarbonate SIZE: 3’ X 4’ X 10” (H X W X D) DBs shall be designed and sized to accommodate the following equipment: <ul style="list-style-type: none"> • Miniature Circuit Breakers (MCBs) • Molded Case Circuit Breakers (MCCBs) • Surge Protection Devices (SPDs) – DC Side • Terminal Blocks • Cable Gland Fittings • External Segments for AC SPD’s Placement.
6.	AC Cable 95 mm² 4 Core	350 ft	GM Cables / Fast Cables / Pakistan Cables Or Equivalent Type: XLPE Insulated, PVC Sheathed, Copper Conductor Conductor: High-conductivity annealed copper Cross Section: 120 mm ² , 4 Core (Three phase + Neutral) Voltage Rating: 0.6/1 kV (600/1000V AC) Insulation: XLPE (Cross-linked Polyethylene) for high thermal endurance Sheath: UV- and weather-resistant PVC outer sheath Copper cable for AC output connection from inverters to LT panels
7.	AC MCCB	03	CHINT / MORA / TOMZN Or Equivalent Current Rating: 250A Type: 4 Pole Voltage: 400V AC Breaking Capacity: 25kA – 50kA Standards: IEC 60947-2

8.	AC SPD - 4 Pole	03	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Type: Type II SPD (AC side protection) Configuration: 4-Pole (L1, L2, L3, N) Nominal Voltage: 230/440V AC Maximum Continuous Operating Voltage (Uc): 275V–385V AC Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): 60 kA Response Time: <25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
9.	Cable Ties	3 packs	<p>KSS OR Equivalent</p> <p>Material: UV-stabilized Nylon 66 (Polyamide) Length: 9” Width: 4.8 mm optional sizes available Tensile Strength: ~22 kg (50 lbs.) Color: UV Black/White (outdoor grade) For neat bundling and securing of DC/AC cables. Suitable for outdoor use in solar structures due to UV resistance</p>
10.	Stainless Steel Cable Ties	1 packs	<p>Material: SS304 or SS316 (corrosion-resistant stainless steel)</p> <p>Length: 8” / 12” Width: 4.6 mm / 7.9 mm (standard sizes) Thickness: ~0.25 mm Temperature Resistance: –80°C to +538°C Locking Type: Self-locking ball-bearing mechanism.</p>
11.	Cable Silver Glands	10 Pcs	<p>Type: Weatherproof, Double Compression Material Options: Brass (Nickel-Silver)– preferred for outdoor & heavy-duty use Ingress Protection: IP65 / IP66 / IP67 Cable Size Range: PG7 to PG48 or M12 to M63 Thread Types: PG Temperature Resistance: –40°C to +100°C Clamping Range: Tight, secure grip on various cable diameters Features: UV resistant (outdoor use) Flame retardant and oil-resistant Strain relief and seal against dust and water Entry points of solar junction boxes, ACDB/DCDB, inverter enclosures, and panels.</p>

12.	GI Cable Duct	1400 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 2 inch × 2 inch (Width × Height)</p> <p>Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p> <p>Construction: Ventilated or solid bottom Detachable top cover for easy cable access Sharp edge-free bends for cable safety Electro-galvanized Mounted using GI brackets, clamps, or supports on solar structure or rooftop surface.</p>
13.	GI Cable Duct	250 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 3 inch × 6 inch (Width × Height)</p> <p>Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p>
14.	GI Cable Duct	180 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 4 inch × 6 inch</p> <p>Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p>
15.	Stainless Steel Conduits	300 ft	<p>1" Stainless Steel Conduit Pipe</p> <p>Material: Stainless Steel</p> <p>Outer Diameter: 1 inch (≈ 25 mm) Wall Thickness: Schedule 40 or 80 (as required)</p>
16.	Metal Flexible Conduit Pipe	1300 Ft	<p>Type: Galvanized Steel Flexible Conduit</p> <p>Size: 1" – 2"</p> <p>Material: Hot-dip galvanized steel strip, helical wound</p> <p>Inner Diameter: 19 mm to 50 mm depending on size</p> <p>Coating: PVC-coated for additional weather resistance</p> <p>Bending Radius: Tight and flexible for easy routing</p> <p>Temperature Resistance: –20°C to +100°C</p> <p>Ingress Protection: IP54–IP65</p> <p>Flame Retardant: Yes (PVC-coated variants)</p>

17.	Installation & Transportation Services	03	<p>Installation scope includes:</p> <ul style="list-style-type: none"> • Mounting of 615W bifacial PV modules on Ground Mounted Structure. • Inverter installation. • DC/AC wiring with trays, ducts, conduits, and glands. • Installation of DC/AC MCBs, SPDs, disconnects • 3 earth bores (100–120 ft) with lightning protection. • Walkways and access platforms for O&M. • Welding, finishing, and structural alignment. • Safe and insured delivery of all equipment to project site. • Handling of fragile components like bifacial PV modules and inverters. • Transport of long and heavy items like H-beams, C-channels, and ducts. • Use of dedicated vehicles with proper strapping and padding like Cranes, Loaders etc. • Trained staff for loading, unloading, and site coordination. • Route planning for timely and secure delivery • Prevents equipment damage and project delays.
18.	Commissioning & Services	01	<p>Commissioning scope includes:</p> <ul style="list-style-type: none"> • Complete system inspection before energization • Verification of PV module connections and inverter wiring • Testing of DC/AC protection devices (MCBs, SPDs, disconnects) • Insulation resistance and continuity checks for all cables. • Configuration and startup of inverters. • Synchronization with utility grid and protection relay testing. • Performance ratio (PR) testing and output verification. • Monitoring system setup and remote access configuration. • Handover report with complete commissioning documentation • Design, engineering & system layout Planning Technical documentation and drawings Logistics & site coordination • Utility liaison & net metering support • After-sales service and technical assistance • 3 Years after sales service
19.	Net Metering & Processing	01	<p>Net Metering scope includes:</p> <ul style="list-style-type: none"> • Complete Job as per sanction load • Preparation and submission of complete Net-Metering

			<p>application documents in line with NEPRA Net-Metering Regulations.</p> <ul style="list-style-type: none"> • Green Meter Application & Demand Notice as per DISCO requirements. • Coordination and facilitation of WAPDA/DISCO technical survey of the plant. • Inclusion of all technical details, single-line diagrams (SLD), equipment certifications, and site layouts. • Issuance of Distribution License, AEDB (Alternative Energy Development Board). • Preparation and execution of agreements with DISCO and GENCO for Net-Metering interconnection. • Arrangement of on-site physical inspection and practical checking by DISCO engineers. • Sanction load to be adjusted and upgraded in coordination with DISCO. • Conduct a Load Flow Study for the interconnection point, ensuring compliance with NEPRA Grid Code and stability of the distribution network. • Rectification of any observations raised until formal approval is granted. • Handover of Net-Metering License issued by AEDB/NEPRA to the client. • Successful synchronization of the PV system with the utility grid under the approved sanctioned load.
20.	Earth Bores	03	<p>100 to 120 ft Depth 3 deep-earth bores drilled at strategic points across the site (depending on soil resistivity) Pipe-in-pipe method using corrosion-resistant GI pipe (1.5"), perforated for deep conductivity. Stable earth resistance ≤ 2 ohms as per IEC Standards.</p>
21.	Earth Chemical	01 Gallons	<p>Brand: Marshal OR Equivalent Type: Conductive Gel / Ground Enhancement Material (GEM) Used in all 3 bores with GI pipe electrode for long-term resistance stability.</p>
22.	Lightning Arresters ESE	01	<p>Height and location as per IS 2309 / IEC 62305 lightning protection zone (LPZ) design Down conductors properly clamped and routed to reduce step potential. All connections and joints cad-welded or mechanically fastened for durability</p> <p>ESE Lightning Arrester with $\Delta T = 71\mu s$, providing a protection radius of up to 120 m, mounted on 3m hot dip galvanized mast, complete with chemical Earthing system ($\leq 2 \Omega$).</p>

			Product Height: 400 mm
23.	Earthing Cables	300 ft	Conductor: 50 mm ² high-purity copper (single core, bare) Interconnecting lightning arresters, inverters, and protection boxes to earth pits High conductivity, corrosion resistant and suitable for outdoor burial.
		2000 ft	Conductor: 6 mm ² high-purity copper (single core, bare) Interconnecting panel to panel Earthing and protection boxes to earth pits. High conductivity, corrosion resistant and suitable for outdoor burial.
24.	Civil Work	324 blocks	For solar PV installations reinforced concrete (RCC) pedestal blocks shall be constructed at base as per requirement to ensure long-term structural stability, wind resistance, and load-bearing capacity. Each concrete pedestal will have the following specifications: Backleg Block Size: 10” x 10“ x 6” (Length x Width x Height) Frontleg Block Size: 10” x 10“ x 3”(Length x Width x Height) (Ground Mounted Structure – 324 Blocks) Material Mix Ratio: 1:3:4 Material: Reinforced cement concrete (RCC) using M20 grade concrete Base Preparation: Compacted soil base with a PCC (Plain Cement Concrete) layer for leveling Purpose: To securely anchor vertical steel pillars of the shed-mounted solar support structure
25.	Genset Monitoring System	01	The EPC Contractor shall provide, install, configure, and commission a Supervisory Control and Data Acquisition (SCADA) System for real-time monitoring, control, and data acquisition of the 100 KW solar PV plant. Monitoring system includes: <ul style="list-style-type: none"> • DSE/DIEF or Equivalent • Data acquisition, performance analytics • Fault detection, and reporting. • Fault and alarm detection • DC and AC voltage & current • Inverter performance • Energy generation (kWh) Monitoring Parameters • Compatible with industry-standard inverters and energy meters. • Remote access for system control and monitoring. • Historical data logging and trend analysis

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Solar Equipment – Pasha Block + Veterinary Academy			
Active Equipment			
1.	Grid-Tied PV String Inverter	01	<p>HUAWEI / SOLIS/ GOODWE OR Equivalent</p> <p>Inverter Rated Capacity 115 KW OR Higher Number of MPPT's / String Inputs: 8 / 10 Max Efficiency P.F > 98.5 % @ 400V OR Higher Start / MPPT range: 195 V / 195 –1000 V Communication: RS485, Wi-Fi, PLC Ingress Protection: IP65/IP66(complete enclosure, outdoor-rated) AFCI/Reverse Protection: Yes Anti-PID Function: Yes Type: Three phase PF Range / THDi: 0.8 lead, 0.8 lag <3% Surge Protection: DC Type II + AC Type II Smart PV Management Compatibility: Yes Data Logger: Yes Certifications & Compliance: IEC/EN 62109-1/-2 (safety), IEC 62116 (anti-islanding), IEC 61727 (grid interface), EN 50549-1/-2 or equivalent Warranty: 5 Years Replacement Warranty and onsite parts replacement and installation.</p>
2.	PV Modules	130 Pcs	<p>Canadian / JINKO / JA Solar / Trina OR Equivalent</p> <p>Technology: High-performance N-Type bifacial solar module with PERC and half-cut cell Technology, designed for industrial and utility-scale installations with superior energy yield, low degradation, and high efficiency Power Output (Pmax): 615 W+ upto 640 Watts Maximum Efficiency: 21.5% OR Higher Voc / Isc: ~50V / ~15A Vmp / Imp: ~42V / ~14.7A Cell Type: 210 mm Mono PERC / N-Type / Topcon Bifaciality: Bifacial, Dual Glass Bifacial Gain: 25% Or Higher Size / Weight: ~2278 × 1134 × 30mm / ~31 kg Glass: Dual-glass, 2.0mm tempered, AR-coated Frame: Anodized Aluminum Alloy Junction Box: IP68 Certifications & Ratings: IEC 61215 / IEC 61730 / IEC 61701 / IEC 62716 Max System Voltage: 1500V DC Performance: 30 Years Linear or higher ≤1% degradation in year 1, ≤0.4% annually ≥87.4% power at year 30 Temperature Co-efficient: -0.29%/°C Global Tier-1 (BNEF): Yes</p>

			<p>Light Induced Degradation $\leq 0.5\%$ power loss after light stabilization</p> <p>Potential Induced Degradation: $\leq 1.0\%$ power loss after 96 h at 85 °C / 85% RH under ± 1000 V bias $\leq 2.0\%$ power loss after 600 h (extended PID stress) IEC 62804-1 (system voltage stress, Method A)</p> <p>Low Light & High Temperature Performance: $\geq 97\%$ relative efficiency at 200 W/m² irradiance under STC spectrum</p> <p>Nominal Operating Cell Temperature (NOCT): 800 W/m², 20 °C ambient, 1 m/s wind), $\geq 80\%$ of rated STC power output.</p> <p>Product Warranty: 15 Years</p> <p>Performance Warranty: 30 Years Linear onsite replacement and installation.</p>
3.	Rawal Bolts	390 Pcs	<p>Brand Power or Equivalent</p> <p>Through pre-drilled holes in legs foots, tightened with washers and nuts Galvanized Steel.</p> <p>Diameter: 8 mm</p> <p>Length: 2.5"</p>
4.	Fasteners	520 pairs	<p>SS 304/316</p> <p>With Spring Washer</p> <p>M8 / M10 / M12 (as needed)</p>
5.	Washers	520 Pcs	<p>Zinc Plated Galvanized steel – Rectangle Washers</p> <p>14 Gauge</p> <p>1" X 2"</p>
6.	Rawal Bolt Washer	390 Pcs	<p>Mild Steel</p> <p>Zinc Plated</p> <p>As per rawal bolt size</p>
7.	Rawal Bolt Compound	1 sets	<p>Brands: Crystal / Magic OR Equivalent</p> <p>Resin : Hardener</p> <p>Mix Ratio: 1:1</p>
8.	Ground Mounted Structure – L2	65 Sets	<p>L2 Pro Series - Galvanized Structure</p> <p>For Complete System Size: 80 KW as per 615W–640W Modules Tilt Angle: Minimum 15° OR Higher</p> <p>Design Life: 25 – 30 Years</p> <p>Wind bearing design & structure for winds upto 150km/h or higher.</p>

			<p>Structure Specifications:</p> <ul style="list-style-type: none"> • Round L- Type Elevated Base Foots. • Module Mounting Rails (Top Rails). • SS 304 Nuts & Bolts with Washers For assembly & fixing of all GI members. • All cut edges of structure members should be treated with paint layers to restore corrosion protection lost during cutting. • Minimum of one coat of paint shall be applied on all exposed and cut edges to enhance the overall durability, service life and structural integrity of installed ground mounted pro type L2 structure.
Passive Equipment / Work - Pasha Block + Veterinary Academy			
1.	DC Cable – 4mm ²	2500 mtr	<p>Fast Cables / Pakistan Cables / CopperGate Cables OR Equivalent</p> <p>Size: 4.0 mm² & 6.0 mm² Material Type: Single core, copper (CU) with PVC insulation Voltage Rating: 750V Current Rating: 32A (At 30°C ambient temperature) Conductor: Flexible, stranded copper Insulation: XLPO / XLPOAT 1500VDC Standards: BS EN 60228, BS 6004, IEC 60332-1 Operating Temperature: 90°C Bending Radius: 14mm (minimum) Overall Diameter (Approx.): 3.80-4.60mm Coil Length: 450 meters (coil size). Suitable for: DC applications, including solar power systems.</p>
2.	DC MCB – 4 Pole	15 Pcs	<p>CHINT / MORA / TOMZN / ETEK OR Equivalent</p> <p>1000V DC – 25A/32A, 4-Pole Polarity: Bidirectional handles positive and negative lines. Arc Quenching: Built-in arc extinguishing chamber for safe DC disconnection. Material: Flame-retardant, high-strength thermoplastic casing. Standards: IEC, CE, Or Equivalent.</p>
3.	DC SPD - 3 Pole	15 Pcs	<p>NOARK / ETEK OR Equivalent</p> <p>Class T1+T2 , 3-Pole DC 1200 – 1500V DC Poles: 3-Pole Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): Up to 40 kA Protection Mode: Common mode and differential mode Response Time: < 25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> • UKCA • VDE

			<ul style="list-style-type: none"> • TUV Rhineland • CE OR Equivalent
4.	Multi Connectors	5 pairs	HK / MORA / TOMZN 1000–1500V DC UV-resistant plastic with copper-tinned contacts
5.	DC & AC DB	01	Mild Steel – 16 Gauge – Powder Coated DB Box Enclosure: weatherproof powder coated GI or polycarbonate SIZE: 3’ X 4’ X 10” (H X W X D) DBs shall be designed and sized to accommodate the following equipment: <ul style="list-style-type: none"> • Miniature Circuit Breakers (MCBs) • Molded Case Circuit Breakers (MCCBs) • Surge Protection Devices (SPDs) – DC Side • Terminal Blocks • Cable Gland Fittings • External Segments for AC SPD’s Placement.
6.	AC Cable 95 mm² 4 Core	400 ft	GM Cables / Fast Cables / Pakistan Cables Or Equivalent Type: XLPE Insulated, PVC Sheathed, Copper Conductor Conductor: High-conductivity annealed copper Cross Section: 120 mm ² , 4 Core (Three phase + Neutral) Voltage Rating: 0.6/1 kV (600/1000V AC) Insulation: XLPE (Cross-linked Polyethylene) for high thermal endurance Sheath: UV- and weather-resistant PVC outer sheath Copper cable for AC output connection from inverters to LT panels
7.	AC MCCB	01	CHINT / MORA / TOMZN Or Equivalent Current Rating: 250A Type: 4 Pole Voltage: 400V AC Breaking Capacity: 25kA – 50kA Standards: IEC 60947-2
8.	AC SPD - 4 Pole	01	CHINT / MORA / TOMZN Or Equivalent

			<p>Type: Type II SPD (AC side protection) Configuration: 4-Pole (L1, L2, L3, N) Nominal Voltage: 230/440V AC Maximum Continuous Operating Voltage (Uc): 275V–385V AC Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): 60 kA Response Time: <25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
9.	Cable Ties	3 packs	<p>KSS OR Equivalent</p> <p>Material: UV-stabilized Nylon 66 (Polyamide)</p> <p>Length: 9” Width: 4.8 mm optional sizes available Tensile Strength: ~22 kg (50 lbs.) Color: UV Black/White (outdoor grade) For neat bundling and securing of DC/AC cables. Suitable for outdoor use in solar structures due to UV resistance</p>
10.	Stainless Steel Cable Ties	1 packs	<p>Material: SS304 or SS316 (corrosion-resistant stainless steel)</p> <p>Length: 8” / 12” Width: 4.6 mm / 7.9 mm (standard sizes) Thickness: ~0.25 mm Temperature Resistance: –80°C to +538°C Locking Type: Self-locking ball-bearing mechanism.</p>
11.	Cable Silver Glands	10 Pcs	<p>Type: Weatherproof, Double Compression Material Options: Brass (Nickel-Silver)– preferred for outdoor & heavy-duty use Ingress Protection: IP65 / IP66 / IP67 Cable Size Range: PG7 to PG48 or M12 to M63 Thread Types: PG Temperature Resistance: –40°C to +100°C Clamping Range: Tight, secure grip on various cable diameters Features: UV resistant (outdoor use) Flame retardant and oil-resistant Strain relief and seal against dust and water Entry points of solar junction boxes, ACDB/DCDB, inverter enclosures, and panels.</p>
12.	GI Cable Duct	3000	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion</p>

		ft	<p>resistance</p> <p>Duct Size: 2 inch × 2 inch (Width × Height)</p> <p>Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p> <p>Construction: Ventilated or solid bottom Detachable top cover for easy cable access Sharp edge-free bends for cable safety Electro-galvanized Mounted using GI brackets, clamps, or supports on solar structure or rooftop surface.</p>
13.	GI Cable Duct	1200 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 3 inch × 6 inch (Width × Height) Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p>
14.	GI Cable Duct	120 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 4 inch × 6 inch Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p>
15.	Stainless Steel Conduits	500 ft	<p>1" Stainless Steel Conduit Pipe</p> <p>Material: Stainless Steel Outer Diameter: 1 inch (≈ 25 mm) Wall Thickness: Schedule 40 or 80 (as required)</p>
16.	Metal Flexible Conduit Pipe	900 ft	<p>Type: Galvanized Steel Flexible Conduit Size: 1" – 2"</p> <p>Material: Hot-dip galvanized steel strip, helical wound Inner Diameter: 19 mm to 50 mm depending on size Coating: PVC-coated for additional weather resistance Bending Radius: Tight and flexible for easy routing Temperature Resistance: –20°C to +100°C Ingress Protection: IP54–IP65 Flame Retardant: Yes (PVC-coated variants)</p>
17.	Installation & Transportation	01	<p>Installation scope includes:</p> <ul style="list-style-type: none"> • Mounting of 615W bifacial PV modules on Ground Mounted Structure.

	Services		<ul style="list-style-type: none"> • Inverter installation. • DC/AC wiring with trays, ducts, conduits, and glands. • Installation of DC/AC MCBs, SPDs, disconnects • 3 earth bores (100–120 ft) with lightning protection. • Walkways and access platforms for O&M. • Welding, finishing, and structural alignment. • Safe and insured delivery of all equipment to project site. • Handling of fragile components like bifacial PV modules and inverters. • Transport of long and heavy items like H-beams, C-channels, and ducts. • Use of dedicated vehicles with proper strapping and padding like Cranes, Loaders etc. • Trained staff for loading, unloading, and site coordination. • Route planning for timely and secure delivery • Prevents equipment damage and project delays.
18.	Commissioning & Services	01	<p>Commissioning scope includes:</p> <ul style="list-style-type: none"> • Complete system inspection before energization • Verification of PV module connections and inverter wiring • Testing of DC/AC protection devices (MCBs, SPDs, disconnects) • Insulation resistance and continuity checks for all cables. • Configuration and startup of inverters. • Synchronization with utility grid and protection relay testing. • Performance ratio (PR) testing and output verification. • Monitoring system setup and remote access configuration. • Handover report with complete commissioning documentation • Design, engineering & system layout Planning Technical documentation and drawings Logistics & site coordination • Utility liaison & net metering support • After-sales service and technical assistance • 3 Years after sales service
19.	Net Metering & Processing	01	<p>Net Metering scope includes:</p> <ul style="list-style-type: none"> • Complete Job as per sanction load

			<ul style="list-style-type: none"> • Preparation and submission of complete Net-Metering application documents in line with NEPRA Net-Metering Regulations. • Green Meter Application & Demand Notice as per DISCO requirements. • Coordination and facilitation of WAPDA/DISCO technical survey of the plant. • Inclusion of all technical details, single-line diagrams (SLD), equipment certifications, and site layouts. • Issuance of Distribution License, AEDB (Alternative Energy Development Board). • Preparation and execution of agreements with DISCO and GENCO for Net-Metering interconnection. • Arrangement of on-site physical inspection and practical checking by DISCO engineers. • Sanction load to be adjusted and upgraded in coordination with DISCO. • Conduct a Load Flow Study for the interconnection point, ensuring compliance with NEPRA Grid Code and stability of the distribution network. • Rectification of any observations raised until formal approval is granted. • Handover of Net-Metering License issued by AEDB/NEPRA to the client. • Successful synchronization of the PV system with the utility grid under the approved sanctioned load.
20.	Earth Bores	03	<p>100 to 120 ft Depth 3 deep-earth bores drilled at strategic points across the site (depending on soil resistivity) Pipe-in-pipe method using corrosion-resistant GI pipe (1.5"), perforated for deep conductivity. Stable earth resistance ≤ 2 ohms as per IEC Standards.</p>
21.	Earth Chemical	01 Gallons	<p>Brand: Marshal OR Equivalent Type: Conductive Gel / Ground Enhancement Material (GEM) Used in all 3 bores with GI pipe electrode for long-term resistance stability.</p>
22.	Lightning Arresters ESE	01	<p>Height and location as per IS 2309 / IEC 62305 lightning protection zone (LPZ) design Down conductors properly clamped and routed to reduce step potential. All connections and joints cad-welded or mechanically fastened for durability</p>

			ESE Lightning Arrester with $\Delta T = 71\mu s$, providing a protection radius of up to 120 m, mounted on 3m hot dip galvanized mast, complete with chemical Earthing system ($\leq 2 \Omega$). Product Height: 400 mm
23.	Earthing Cables	150 ft	Conductor: 50 mm ² high-purity copper (single core, bare) Interconnecting lightning arresters, inverters, and protection boxes to earth pits High conductivity, corrosion resistant and suitable for outdoor burial.
		2500 ft	Conductor: 6 mm ² high-purity copper (single core, bare) Interconnecting panel to panel Earthing and protection boxes to earth pits. High conductivity, corrosion resistant and suitable for outdoor burial.
24.	Civil Work	260 blocks	For solar PV installations reinforced concrete (RCC) pedestal blocks shall be constructed at base as per requirement to ensure long-term structural stability, wind resistance, and load-bearing capacity. Each concrete pedestal will have the following specifications: Backleg Block Size: 10" x 10" x 6" (Length x Width x Height) Frontleg Block Size: 10" x 10" x 3" (Length x Width x Height) (Ground Mounted Structure – 260 Blocks) Material Mix Ratio: 1:3:4 Material: Reinforced cement concrete (RCC) using M20 grade concrete Base Preparation: Compacted soil base with a PCC (Plain Cement Concrete) layer for leveling Purpose: To securely anchor vertical steel pillars of the shed-mounted solar support structure
25.	Genset Monitoring System	01	The EPC Contractor shall provide, install, configure, and commission a Supervisory Control and Data Acquisition (SCADA) System for real-time monitoring, control, and data acquisition of the 80 KW solar PV plant. Monitoring system includes: <ul style="list-style-type: none"> • DSE/DIEF or Equivalent • Data acquisition, performance analytics • Fault detection, and reporting. • Fault and alarm detection • DC and AC voltage & current

			<ul style="list-style-type: none"> • Inverter performance • Energy generation (kWh) Monitoring Parameters • Compatible with industry-standard inverters and energy meters. • Remote access for system control and monitoring. • Historical data logging and trend analysis
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Solar Equipment – Pet Center + Pathology + Parasitology

Active Equipment			
1.	Grid-Tied PV String Inverter	02	<p>HUAWEI / SOLIS/ GOODWE OR Equivalent Inverter Rated Capacity 115 KW OR Higher Number of MPPT's / String Inputs: 8 / 10 Max Efficiency P.F > 98.5 % @ 400V OR Higher Start / MPPT range: 195 V / 195 –1000 V Communication: RS485, Wi-Fi, PLC Ingress Protection: IP65/IP66(complete enclosure, outdoor-rated) AFCI/Reverse Protection: Yes Anti-PID Function: Yes Type: Three phase PF Range / THDi: 0.8 lead, 0.8 lag <3% Surge Protection: DC Type II + AC Type II Smart PV Management Compatibility: Yes Data Logger: Yes Certifications & Compliance: IEC/EN 62109-1/-2 (safety), IEC 62116 (anti-islanding), IEC 61727 (grid interface), EN 50549-1/-2 or equivalent Warranty: 5 Years Replacement Warranty and onsite parts replacement and installation.</p>
2.	PV Modules	301 Pcs	<p>Canadian / JINKO / JA Solar / Trina OR Equivalent Technology: High-performance N-Type bifacial solar module with PERC and half-cut cell Technology, designed for industrial and utility-scale installations with superior energy yield, low degradation, and high efficiency Power Output (Pmax): 615 W+ upto 640 Watts Maximum Efficiency: 21.5% OR Higher Voc / Isc: ~50V / ~15A Vmp / Imp: ~42V / ~14.7A Cell Type: 210 mm Mono PERC / N-Type / Topcon Bifaciality: Bifacial, Dual Glass Bifacial Gain: 25% Or Higher Size / Weight: ~2278 × 1134 × 30mm / ~31 kg Glass: Dual-glass, 2.0mm tempered, AR-coated</p>

			<p>Frame: Anodized Aluminum Alloy Junction Box: IP68 Certifications & Ratings: IEC 61215 / IEC 61730 / IEC 61701 / IEC 62716 Max System Voltage: 1500V DC Performance: 30 Years Linear or higher $\leq 1\%$ degradation in year 1, $\leq 0.4\%$ annually $\geq 87.4\%$ power at year 30 Temperature Co-efficient: $-0.29\%/^{\circ}\text{C}$ Global Tier-1 (BNEF): Yes Light Induced Degradation $\leq 0.5\%$ power loss after light stabilization</p> <p>Potential Induced Degradation: $\leq 1.0\%$ power loss after 96 h at 85°C / 85% RH under $\pm 1000\text{ V}$ bias $\leq 2.0\%$ power loss after 600 h (extended PID stress) IEC 62804-1 (system voltage stress, Method A)</p> <p>Low Light & High Temperature Performance: $\geq 97\%$ relative efficiency at 200 W/m^2 irradiance under STC spectrum</p> <p>Nominal Operating Cell Temperature (NOCT): 800 W/m^2, 20°C ambient, 1 m/s wind), $\geq 80\%$ of rated STC power output.</p> <p>Product Warranty: 15 Years</p> <p>Performance Warranty: 30 Years Linear onsite replacement and installation.</p>
3.	Rawal Bolts	900	<p>Brand Power or Equivalent Through pre-drilled holes in legs foots, tightened with washers and nuts Galvanized Steel. Diameter: 8 mm Length: 2.5''</p>
4.	Fasteners	1204 pairs	<p>SS 304/316 With Spring Washer M8 / M10 / M12 (as needed)</p>
5.	Washers	1204 Pcs	<p>Zinc Plated Galvanized steel – Rectangle Washers 14 Gauge 1'' X 2''</p>
6.	Rawal Bolt Washer	900 Pcs	<p>Mild Steel Zinc Plated As per rawal bolt size</p>
7.	Rawal Bolt Compound	2 sets	<p>Brands: Crystal / Magic OR Equivalent Resin : Hardener Mix Ratio: 1:1</p>

8.	Ground Mounted Structure – L2	150 Sets	<p>L2 Pro Series - Galvanized Structure For Complete System Size: 190 KW as per 615W–640W Modules Tilt Angle: Minimum 15° OR Higher Design Life: 25 – 30 Years Wind bearing design & structure for winds upto 150km/h or higher.</p> <p>Structure Specifications:</p> <ul style="list-style-type: none"> • Round L- Type Elevated Base Foots. • Module Mounting Rails (Top Rails). • SS 304 Nuts & Bolts with Washers For assembly & fixing of all GI members. • All cut edges of structure members should be treated with paint layers to restore corrosion protection lost during cutting. • Minimum of one coat of paint shall be applied on all exposed and cut edges to enhance the overall durability, service life and structural integrity of installed ground mounted pro type L2 structure.
Passive Equipment / Work - Pet Center + Pathology + Parasitology			
1.	DC Cable – 4mm²	3800 mtr	<p>Fast Cables / Pakistan Cables / CopperGate Cables OR Equivalent</p> <p>Size: 4.0 mm² & 6.0 mm² Material Type: Single core, copper (CU) with PVC insulation Voltage Rating: 750V Current Rating: 32A (At 30°C ambient temperature) Conductor: Flexible, stranded copper Insulation: XLPO / XLPOAT 1500VDC Standards: BS EN 60228, BS 6004, IEC 60332-1 Operating Temperature: 90°C Bending Radius: 14mm (minimum) Overall Diameter (Approx.): 3.80-4.60mm Coil Length: 450 meters (coil size). Suitable for: DC applications, including solar power systems.</p>
2.	DC MCB – 4 Pole	28	<p>CHINT / MORA / TOMZN / ETEK OR Equivalent</p> <p>1000V DC – 25A/32A, 4-Pole Polarity: Bidirectional handles positive and negative lines. Arc Quenching: Built-in arc extinguishing chamber for safe DC disconnection. Material: Flame-retardant, high-strength thermoplastic casing. Standards: IEC, CE, Or Equivalent.</p>
3.	DC SPD - 3 Pole	28	<p>NOARK / ETEK OR Equivalent</p> <p>Class T1+T2 , 3-Pole DC</p>

			<p>1200 – 1500V DC Poles: 3-Pole Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): Up to 40 kA Protection Mode: Common mode and differential mode Response Time: < 25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
4.	Multi Connectors	8 pairs	<p>HK / MORA / TOMZN 1000–1500V DC UV-resistant plastic with copper-tinned contacts</p>
5.	DC & AC DB	02	<p>Mild Steel – 16 Gauge – Powder Coated DB Box Enclosure: weatherproof powder coated GI or polycarbonate SIZE: 3’ X 4’ X 10” (H X W X D)</p> <p>DBs shall be designed and sized to accommodate the following equipment:</p> <ul style="list-style-type: none"> ● Miniature Circuit Breakers (MCBs) ● Molded Case Circuit Breakers (MCCBs) ● Surge Protection Devices (SPDs) – DC Side ● Terminal Blocks ● Cable Gland Fittings ● External Segments for AC SPD’s Placement.
6.	AC Cable 95 mm² 4 Core	800 ft	<p>GM Cables / Fast Cables / Pakistan Cables Or Equivalent Type: XLPE Insulated, PVC Sheathed, Copper Conductor Conductor: High-conductivity annealed copper Cross Section: 120 mm², 4 Core (Three phase + Neutral) Voltage Rating: 0.6/1 kV (600/1000V AC) Insulation: XLPE (Cross-linked Polyethylene) for high thermal endurance Sheath: UV- and weather-resistant PVC outer sheath Copper cable for AC output connection from inverters to LT panels</p>

7.	AC MCCB	04	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Current Rating: 250A Type: 4 Pole Voltage: 400V AC Breaking Capacity: 25kA – 50kA Standards: IEC 60947-2</p>
8.	AC SPD - 4 Pole	04	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Type: Type II SPD (AC side protection) Configuration: 4-Pole (L1, L2, L3, N) Nominal Voltage: 230/440V AC Maximum Continuous Operating Voltage (Uc): 275V–385V AC Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): 60 kA Response Time: <25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
9.	Cable Ties	5 packs	<p>KSS OR Equivalent</p> <p>Material: UV-stabilized Nylon 66 (Polyamide) Length: 9” Width: 4.8 mm optional sizes available Tensile Strength: ~22 kg (50 lbs.) Color: UV Black/White (outdoor grade) For neat bundling and securing of DC/AC cables. Suitable for outdoor use in solar structures due to UV resistance</p>
10.	Stainless Steel Cable Ties	2 packs	<p>Material: SS304 or SS316 (corrosion-resistant stainless steel)</p> <p>Length: 8” / 12” Width: 4.6 mm / 7.9 mm (standard sizes) Thickness: ~0.25 mm Temperature Resistance: –80°C to +538°C Locking Type: Self-locking ball-bearing mechanism.</p>
11.	Cable Silver	25	Type: Weatherproof, Double Compression

	Glands	Pcs	Material Options: Brass (Nickel-Silver)– preferred for outdoor & heavy-duty use Ingress Protection: IP65 / IP66 / IP67 Cable Size Range: PG7 to PG48 or M12 to M63 Thread Types: PG Temperature Resistance: –40°C to +100°C Clamping Range: Tight, secure grip on various cable diameters Features: UV resistant (outdoor use) Flame retardant and oil-resistant Strain relief and seal against dust and water Entry points of solar junction boxes, ACDB/DCDB, inverter enclosures, and panels.
12.	GI Cable Duct	2000 ft	Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 2 inch × 2 inch (Width × Height) Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft Construction: Ventilated or solid bottom Detachable top cover for easy cable access Sharp edge-free bends for cable safety Electro-galvanized Mounted using GI brackets, clamps, or supports on solar structure or rooftop surface.
13.	GI Cable Duct	750 ft	Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 3 inch × 6 inch (Width × Height) Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft
14.	GI Cable Duct	190 ft	Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 4 inch × 6 inch Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft
15.	Stainless Steel Conduits	600 ft	1" Stainless Steel Conduit Pipe Material: Stainless Steel Outer Diameter: 1 inch (≈ 25 mm) Wall Thickness: Schedule 40 or 80 (as required)
16.	Metal Flexible	1500	Type: Galvanized Steel Flexible Conduit

	Conduit Pipe	ft	<p>Size: 1” – 2” Material: Hot-dip galvanized steel strip, helical wound Inner Diameter: 19 mm to 50 mm depending on size Coating: PVC-coated for additional weather resistance Bending Radius: Tight and flexible for easy routing Temperature Resistance: –20°C to +100°C Ingress Protection: IP54–IP65 Flame Retardant: Yes (PVC-coated variants)</p>
17.	Installation & Transportation Services	04	<p>Installation scope includes:</p> <ul style="list-style-type: none"> • Mounting of 615W bifacial PV modules on Ground Mounted Structure. • Inverter installation. • DC/AC wiring with trays, ducts, conduits, and glands. • Installation of DC/AC MCBs, SPDs, disconnects • 4 earth bores (100–120 ft) with lightning protection. • Walkways and access platforms for O&M. • Welding, finishing, and structural alignment. • Safe and insured delivery of all equipment to project site. • Handling of fragile components like bifacial PV modules and inverters. • Transport of long and heavy items like H-beams, C-channels, and ducts. • Use of dedicated vehicles with proper strapping and padding like Cranes, Loaders etc. • Trained staff for loading, unloading, and site coordination. • Route planning for timely and secure delivery • Prevents equipment damage and project delays.
18.	Commissioning & Services	01	<p>Commissioning scope includes:</p> <ul style="list-style-type: none"> • Complete system inspection before energization • Verification of PV module connections and inverter wiring • Testing of DC/AC protection devices (MCBs, SPDs, disconnects) • Insulation resistance and continuity checks for all cables. • Configuration and startup of inverters. • Synchronization with utility grid and protection relay testing. • Performance ratio (PR) testing and output verification. • Monitoring system setup and remote access configuration.

			<ul style="list-style-type: none"> • Handover report with complete commissioning documentation • Design, engineering & system layout Planning Technical documentation and drawings Logistics & site coordination • Utility liaison & net metering support • After-sales service and technical assistance • 3 Years after sales service
19.	Net Metering & Processing	01	<p>Net Metering scope includes:</p> <ul style="list-style-type: none"> • Complete Job as per sanction load • Preparation and submission of complete Net-Metering application documents in line with NEPRA Net-Metering Regulations. • Green Meter Application & Demand Notice as per DISCO requirements. • Coordination and facilitation of WAPDA/DISCO technical survey of the plant. • Inclusion of all technical details, single-line diagrams (SLD), equipment certifications, and site layouts. • Issuance of Distribution License, AEDB (Alternative Energy Development Board). • Preparation and execution of agreements with DISCO and GENCO for Net-Metering interconnection. • Arrangement of on-site physical inspection and practical checking by DISCO engineers. • Sanction load to be adjusted and upgraded in coordination with DISCO. • Conduct a Load Flow Study for the interconnection point, ensuring compliance with NEPRA Grid Code and stability of the distribution network. • Rectification of any observations raised until formal approval is granted. • Handover of Net-Metering License issued by AEDB/NEPRA to the client. • Successful synchronization of the PV system with the utility grid under the approved sanctioned load.
20.	Earth Bores	04	<p>100 to 120 ft Depth 4 deep-earth bores drilled at strategic points across the site (depending on soil resistivity) Pipe-in-pipe method using corrosion-resistant GI pipe (1.5"), perforated for deep conductivity. Stable earth resistance ≤ 2 ohms as per IEC Standards.</p>

21.	Earth Chemical	02 Gallons	<p>Brand: Marshal OR Equivalent Type: Conductive Gel / Ground Enhancement Material (GEM) Used in all 4 bores with GI pipe electrode for long-term resistance stability.</p>
22.	Lightning Arresters ESE	02	<p>Height and location as per IS 2309 / IEC 62305 lightning protection zone (LPZ) design Down conductors properly clamped and routed to reduce step potential. All connections and joints cad-welded or mechanically fastened for durability</p> <p>ESE Lightning Arrester with $\Delta T = 71\mu s$, providing a protection radius of up to 120 m, mounted on 3m hot dip galvanized mast, complete with chemical Earthing system ($\leq 2 \Omega$). Product Height: 400 mm</p>
23.	Earthing Cables	450 ft	<p>Conductor: 50 mm² high-purity copper (single core, bare) Interconnecting lightning arresters, inverters, and protection boxes to earth pits High conductivity, corrosion resistant and suitable for outdoor burial.</p>
		5000 ft	<p>Conductor: 6 mm² high-purity copper (single core, bare) Interconnecting panel to panel Earthing and protection boxes to earth pits. High conductivity, corrosion resistant and suitable for outdoor burial.</p>
24.	Civil Work	604 blocks	<p>For solar PV installations reinforced concrete (RCC) pedestal blocks shall be constructed at base as per requirement to ensure long-term structural stability, wind resistance, and load-bearing capacity. Each concrete pedestal will have the following specifications: Backleg Block Size: 10" x 10" x 6" (Length x Width x Height) Frontleg Block Size: 10" x 10" x 3" (Length x Width x Height) (Ground Mounted Structure – 604 Blocks) Material Mix Ratio: 1:3:4 Material: Reinforced cement concrete (RCC) using M20 grade concrete Base Preparation: Compacted soil base with a PCC (Plain Cement Concrete) layer for leveling</p>

			Purpose: To securely anchor vertical steel pillars of the shed-mounted solar support structure
25.	Genset Monitoring System	01	<p>The EPC Contractor shall provide, install, configure, and commission a Supervisory Control and Data Acquisition (SCADA) System for real-time monitoring, control, and data acquisition of the 185 KW solar PV plant.</p> <p>Monitoring system includes:</p> <ul style="list-style-type: none"> • DSE/DIEF or Equivalent • Data acquisition, performance analytics • Fault detection, and reporting. • Fault and alarm detection • DC and AC voltage & current • Inverter performance • Energy generation (kWh) Monitoring Parameters <ul style="list-style-type: none"> • Compatible with industry-standard inverters and energy meters. • Remote access for system control and monitoring. • Historical data logging and trend analysis

Solar Equipment – QOL Building			
Active Equipment			
1.	Grid-Tied PV String Inverter	01	<p>HUAWEI / SOLIS/ GOODWE OR Equivalent</p> <p>Inverter Rated Capacity 115 KW OR Higher Number of MPPT's / String Inputs: 8 / 10 Max Efficiency P.F > 98.5 % @ 400V OR Higher Start / MPPT range: 195 V / 195 –1000 V Communication: RS485, Wi-Fi, PLC Ingress Protection: IP65/IP66(complete enclosure, outdoor-rated) AFCI/Reverse Protection: Yes Anti-PID Function: Yes Type: Three phase PF Range / THDi: 0.8 lead, 0.8 lag <3% Surge Protection: DC Type II + AC Type II Smart PV Management Compatibility: Yes Data Logger: Yes Certifications & Compliance: IEC/EN 62109-1/-2 (safety), IEC 62116 (anti-islanding), IEC 61727 (grid interface), EN 50549-1/-2 or equivalent Warranty: 5 Years Replacement Warranty and onsite parts replacement and installation.</p>

2.	PV Modules	82 Pcs	<p>Canadian / JINKO / JA Solar / Trina OR Equivalent Technology: High-performance N-Type bifacial solar module with PERC and half-cut cell Technology, designed for industrial and utility-scale installations with superior energy yield, low degradation, and high efficiency Power Output (Pmax): 615 W+ upto 640 Watts Maximum Efficiency: 21.5% OR Higher Voc / Isc: ~50V / ~15A Vmp / Imp: ~42V / ~14.7A Cell Type: 210 mm Mono PERC / N-Type / Topcon Bifaciality: Bifacial, Dual Glass Bifacial Gain: 25% Or Higher Size / Weight: ~2278 × 1134 × 30mm / ~31 kg Glass: Dual-glass, 2.0mm tempered, AR-coated Frame: Anodized Aluminum Alloy Junction Box: IP68 Certifications & Ratings: IEC 61215 / IEC 61730 / IEC 61701 / IEC 62716 Max System Voltage: 1500V DC Performance: 30 Years Linear or higher ≤1% degradation in year 1, ≤0.4% annually ≥87.4% power at year 30 Temperature Co-efficient: -0.29%/°C Global Tier-1 (BNEF): Yes Light Induced Degradation ≤ 0.5% power loss after light stabilization Potential Induced Degradation: ≤ 1.0% power loss after 96 h at 85 °C / 85% RH under ±1000 V bias ≤ 2.0% power loss after 600 h (extended PID stress) IEC 62804-1 (system voltage stress, Method A) Low Light & High Temperature Performance: ≥97% relative efficiency at 200 W/m² irradiance under STC spectrum Nominal Operating Cell Temperature (NOCT): 800 W/m², 20 °C ambient, 1 m/s wind), ≥80% of rated STC power output.</p> <p>Product Warranty: 15 Years Performance Warranty: 30 Years Linear onsite replacement and installation.</p>
3.	Rawal Bolts	246 Pcs	<p>Brand Power or Equivalent Through pre-drilled holes in legs foots, tightened with washers and nuts Galvanized Steel. Diameter: 8 mm Length: 2.5”</p>
4.	Fasteners	344 pairs	<p>SS 304/316 With Spring Washer M8 / M10 / M12 (as needed)</p>

5.	Washers	344 Pcs	Zinc Plated Galvanized steel – Rectangle Washers 14 Gauge 1" X 2"
6.	Rawal Bolt Washer	246 Pcs	Mild Steel Zinc Plated As per rawal bolt size
7.	Rawal Bolt Compound	1 sets	Brands: Crystal / Magic OR Equivalent Resin : Hardener Mix Ratio: 1:1
8.	Ground Mounted Structure – L2	41 Sets	L2 Pro Series - Galvanized Structure For Complete System Size: 50 KW as per 615W–640W Modules Tilt Angle: Minimum 15° OR Higher Design Life: 25 – 30 Years Wind bearing design & structure for winds upto 150km/h or higher. Structure Specifications: <ul style="list-style-type: none"> • Round L- Type Elevated Base Feet. • Module Mounting Rails (Top Rails). • SS 304 Nuts & Bolts with Washers For assembly & fixing of all GI members. • All cut edges of structure members should be treated with paint layers to restore corrosion protection lost during cutting. • Minimum of one coat of paint shall be applied on all exposed and cut edges to enhance the overall durability, service life and structural integrity of installed ground mounted pro type L2 structure.
Passive Equipment / Work - QOL Building			
1.	DC Cable – 4mm²	1500 mtr	Fast Cables / Pakistan Cables / CopperGate Cables OR Equivalent Size: 4.0 mm ² & 6.0 mm ² Material Type: Single core, copper (CU) with PVC insulation Voltage Rating: 750V Current Rating: 32A (At 30°C ambient temperature) Conductor: Flexible, stranded copper Insulation: XLPO / XLPOAT 1500VDC Standards: BS EN 60228, BS 6004, IEC 60332-1 Operating Temperature: 90°C Bending Radius: 14mm (minimum) Overall Diameter (Approx.): 3.80-4.60mm Coil Length: 450 meters (coil size). Suitable for: DC applications, including solar power systems.

2.	DC MCB – 4 Pole	12 Pcs	<p>CHINT / MORA / TOMZN / ETEK OR Equivalent</p> <p>1000V DC – 25A/32A, 4-Pole Polarity: Bidirectional handles positive and negative lines. Arc Quenching: Built-in arc extinguishing chamber for safe DC disconnection. Material: Flame-retardant, high-strength thermoplastic casing. Standards: IEC, CE, Or Equivalent.</p>
3.	DC SPD - 3 Pole	12 Pcs	<p>NOARK / ETEK OR Equivalent</p> <p>Class T1+T2 , 3-Pole DC 1200 – 1500V DC Poles: 3-Pole Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): Up to 40 kA Protection Mode: Common mode and differential mode Response Time: < 25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
4.	Multi Connectors	5 pairs	<p>HK / MORA / TOMZN</p> <p>1000–1500V DC UV-resistant plastic with copper-tinned contacts</p>
5.	DC & AC DB	01	<p>Mild Steel – 16 Gauge – Powder Coated DB Box</p> <p>Enclosure: weatherproof powder coated GI or polycarbonate SIZE: 3’ X 4’ X 10” (H X W X D)</p> <p>DBs shall be designed and sized to accommodate the following equipment:</p> <ul style="list-style-type: none"> ● Miniature Circuit Breakers (MCBs) ● Molded Case Circuit Breakers (MCCBs) ● Surge Protection Devices (SPDs) – DC Side ● Terminal Blocks ● Cable Gland Fittings ● External Segments for AC SPD’s Placement.

6.	AC Cable 95 mm ² 4 Core	450 ft	<p>GM Cables / Fast Cables / Pakistan Cables Or Equivalent</p> <p>Type: XLPE Insulated, PVC Sheathed, Copper Conductor Conductor: High-conductivity annealed copper Cross Section: 120 mm², 4 Core (Three phase + Neutral) Voltage Rating: 0.6/1 kV (600/1000V AC) Insulation: XLPE (Cross-linked Polyethylene) for high thermal endurance Sheath: UV- and weather-resistant PVC outer sheath Copper cable for AC output connection from inverters to LT panels</p>
7.	AC MCCB	01	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Current Rating: 250A Type: 4 Pole Voltage: 400V AC Breaking Capacity: 25kA – 50kA Standards: IEC 60947-2</p>
8.	AC SPD - 4 Pole	01	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Type: Type II SPD (AC side protection) Configuration: 4-Pole (L1, L2, L3, N) Nominal Voltage: 230/440V AC Maximum Continuous Operating Voltage (Uc): 275V–385V AC Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): 60 kA Response Time: <25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
9.	Cable Ties	2 packs	<p>KSS OR Equivalent</p> <p>Material: UV-stabilized Nylon 66 (Polyamide)</p> <p>Length: 9” Width: 4.8 mm optional sizes available Tensile Strength: ~22 kg (50 lbs.)</p>

			Color: UV Black/White (outdoor grade) For neat bundling and securing of DC/AC cables. Suitable for outdoor use in solar structures due to UV resistance
10.	Stainless Steel Cable Ties	1 packs	Material: SS304 or SS316 (corrosion-resistant stainless steel) Length: 8" / 12" Width: 4.6 mm / 7.9 mm (standard sizes) Thickness: ~0.25 mm Temperature Resistance: -80°C to +538°C Locking Type: Self-locking ball-bearing mechanism.
11.	Cable Silver Glands	10 Pcs	Type: Weatherproof, Double Compression Material Options: Brass (Nickel-Silver)– preferred for outdoor & heavy-duty use Ingress Protection: IP65 / IP66 / IP67 Cable Size Range: PG7 to PG48 or M12 to M63 Thread Types: PG Temperature Resistance: -40°C to +100°C Clamping Range: Tight, secure grip on various cable diameters Features: UV resistant (outdoor use) Flame retardant and oil-resistant Strain relief and seal against dust and water Entry points of solar junction boxes, ACDB/DCDB, inverter enclosures, and panels.
12.	GI Cable Duct	1200 ft	Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 2 inch × 2 inch (Width × Height) Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft Construction: Ventilated or solid bottom Detachable top cover for easy cable access Sharp edge-free bends for cable safety Electro-galvanized Mounted using GI brackets, clamps, or supports on solar structure or rooftop surface.
13.	GI Cable Duct	300 ft	Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 3 inch × 6 inch (Width × Height) Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft

14.	GI Cable Duct	150 ft	Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 4 inch × 6 inch Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft
15.	Stainless Steel Conduits	600 ft	1" Stainless Steel Conduit Pipe Material: Stainless Steel Outer Diameter: 1 inch (≈ 25 mm) Wall Thickness: Schedule 40 or 80 (as required)
16.	Metal Flexible Conduit Pipe	900 ft	Type: Galvanized Steel Flexible Conduit Size: 1" – 2" Material: Hot-dip galvanized steel strip, helical wound Inner Diameter: 19 mm to 50 mm depending on size Coating: PVC-coated for additional weather resistance Bending Radius: Tight and flexible for easy routing Temperature Resistance: –20°C to +100°C Ingress Protection: IP54–IP65 Flame Retardant: Yes (PVC-coated variants)
17.	Installation & Transportation Services	01	Installation scope includes: <ul style="list-style-type: none"> • Mounting of 615W bifacial PV modules on Ground Mounted Structure. • Inverter installation. • DC/AC wiring with trays, ducts, conduits, and glands. • Installation of DC/AC MCBs, SPDs, disconnects • 2 earth bores (100–120 ft) with lightning protection. • Walkways and access platforms for O&M. • Welding, finishing, and structural alignment. • Safe and insured delivery of all equipment to project site. • Handling of fragile components like bifacial PV modules and inverters. • Transport of long and heavy items like H-beams, C-channels, and ducts. • Use of dedicated vehicles with proper strapping and padding like Cranes, Loaders etc. • Trained staff for loading, unloading, and site coordination. • Route planning for timely and secure delivery • Prevents equipment damage and project delays.

18.	Commissioning & Services	01	<p>Commissioning scope includes:</p> <ul style="list-style-type: none"> • Complete system inspection before energization • Verification of PV module connections and inverter wiring • Testing of DC/AC protection devices (MCBs, SPDs, disconnects) • Insulation resistance and continuity checks for all cables. • Configuration and startup of inverters. • Synchronization with utility grid and protection relay testing. • Performance ratio (PR) testing and output verification. • Monitoring system setup and remote access configuration. • Handover report with complete commissioning documentation • Design, engineering & system layout Planning Technical documentation and drawings Logistics & site coordination • Utility liaison & net metering support • After-sales service and technical assistance • 3 Years after sales service
19.	Net Metering & Processing	01	<p>Net Metering scope includes:</p> <ul style="list-style-type: none"> • Complete Job as per sanction load • Preparation and submission of complete Net-Metering application documents in line with NEPRA Net-Metering Regulations. • Green Meter Application & Demand Notice as per DISCO requirements. • Coordination and facilitation of WAPDA/DISCO technical survey of the plant. • Inclusion of all technical details, single-line diagrams (SLD), equipment certifications, and site layouts. • Issuance of Distribution License, AEDB (Alternative Energy Development Board). • Preparation and execution of agreements with DISCO and GENCO for Net-Metering interconnection. • Arrangement of on-site physical inspection and practical checking by DISCO engineers. • Sanction load to be adjusted and upgraded in coordination with DISCO. • Conduct a Load Flow Study for the interconnection

			<p>point, ensuring compliance with NEPRA Grid Code and stability of the distribution network.</p> <ul style="list-style-type: none"> • Rectification of any observations raised until formal approval is granted. • Handover of Net-Metering License issued by AEDB/NEPRA to the client. • Successful synchronization of the PV system with the utility grid under the approved sanctioned load.
20.	Earth Bores	02	<p>100 to 120 ft Depth 2 deep-earth bores drilled at strategic points across the site (depending on soil resistivity) Pipe-in-pipe method using corrosion-resistant GI pipe (1.5"), perforated for deep conductivity. Stable earth resistance ≤ 2 ohms as per IEC Standards.</p>
21.	Earth Chemical	01 Gallons	<p>Brand: Marshal OR Equivalent Type: Conductive Gel / Ground Enhancement Material (GEM) Used in all 2 bores with GI pipe electrode for long-term resistance stability.</p>
22.	Lightning Arresters ESE	01	<p>Height and location as per IS 2309 / IEC 62305 lightning protection zone (LPZ) design Down conductors properly clamped and routed to reduce step potential. All connections and joints cad-welded or mechanically fastened for durability</p> <p>ESE Lightning Arrester with $\Delta T = 71\mu s$, providing a protection radius of up to 120 m, mounted on 3m hot dip galvanized mast, complete with chemical Earthing system ($\leq 2 \Omega$). Product Height: 400 mm</p>
23.	Earthing Cables	650 ft	<p>Conductor: 50 mm² high-purity copper (single core, bare) Interconnecting lightning arresters, inverters, and protection boxes to earth pits High conductivity, corrosion resistant and suitable for outdoor burial.</p>
		1200 ft	<p>Conductor: 6 mm² high-purity copper (single core, bare) Interconnecting panel to panel Earthing and protection boxes to earth pits. High conductivity, corrosion resistant and suitable for outdoor burial.</p>

24.	Civil Work	164 blocks	<p>For solar PV installations reinforced concrete (RCC) pedestal blocks shall be constructed at base as per requirement to ensure long-term structural stability, wind resistance, and load-bearing capacity. Each concrete pedestal will have the following specifications: Backleg Block Size: 10” x 10“ x 6” (Length x Width x Height) Frontleg Block Size: 10” x 10“ x 3”(Length x Width x Height) (Ground Mounted Structure – 164 Blocks) Material Mix Ratio: 1:3:4 Material: Reinforced cement concrete (RCC) using M20 grade concrete Base Preparation: Compacted soil base with a PCC (Plain Cement Concrete) layer for leveling Purpose: To securely anchor vertical steel pillars of the shed-mounted solar support structure</p>
25.	Genset Monitoring System	01	<p>The EPC Contractor shall provide, install, configure, and commission a Supervisory Control and Data Acquisition (SCADA) System for real-time monitoring, control, and data acquisition of the 50 KW solar PV plant. Monitoring system includes:</p> <ul style="list-style-type: none"> • DSE/DIEF or Equivalent • Data acquisition, performance analytics • Fault detection, and reporting. • Fault and alarm detection • DC and AC voltage & current • Inverter performance • Energy generation (kWh) Monitoring Parameters <ul style="list-style-type: none"> • Compatible with industry-standard inverters and energy meters. • Remote access for system control and monitoring. • Historical data logging and trend analysis

Solar Equipment – Environmental Sciences + Epidemiology + Microbiology + Old IPS + New IPS			
Active Equipment			
1.	Grid-Tied PV String Inverter	03	<p>HUAWEI / SOLIS/ GOODWE OR Equivalent Inverter Rated Capacity 115 KW OR Higher Number of MPPT’s / String Inputs: 8 / 10 Max Efficiency P.F > 98.5 % @ 400V OR Higher Start / MPPT range: 195 V / 195 –1000 V</p>

			<p>Communication: RS485, Wi-Fi, PLC</p> <p>Ingress Protection: IP65/IP66(complete enclosure, outdoor-rated)</p> <p>AFCI/Reverse Protection: Yes</p> <p>Anti-PID Function: Yes</p> <p>Type: Three phase</p> <p>PF Range / THDi: 0.8 lead, 0.8 lag <3%</p> <p>Surge Protection: DC Type II + AC Type II</p> <p>Smart PV Management Compatibility: Yes</p> <p>Data Logger: Yes</p> <p>Certifications & Compliance: IEC/EN 62109-1/-2 (safety), IEC 62116 (anti-islanding), IEC 61727 (grid interface), EN 50549-1/-2 or equivalent</p> <p>Warranty: 5 Years Replacement Warranty and onsite parts replacement and installation.</p>
2.	PV Modules	512 Pcs	<p>Canadian / JINKO / JA Solar / Trina OR Equivalent</p> <p>Technology: High-performance N-Type bifacial solar module with PERC and half-cut cell Technology, designed for industrial and utility-scale installations with superior energy yield, low degradation, and high efficiency</p> <p>Power Output (Pmax): 615 W+ upto 640 Watts Maximum</p> <p>Efficiency: 21.5% OR Higher</p> <p>Voc / Isc: ~50V / ~15A</p> <p>Vmp / Imp: ~42V / ~14.7A</p> <p>Cell Type: 210 mm Mono PERC / N-Type / Topcon</p> <p>Bifaciality: Bifacial, Dual Glass</p> <p>Bifacial Gain: 25% Or Higher</p> <p>Size / Weight: ~2278 × 1134 × 30mm / ~31 kg</p> <p>Glass: Dual-glass, 2.0mm tempered, AR-coated</p> <p>Frame: Anodized Aluminum Alloy</p> <p>Junction Box: IP68</p> <p>Certifications & Ratings: IEC 61215 / IEC 61730 / IEC 61701 / IEC 62716</p> <p>Max System Voltage: 1500V DC</p> <p>Performance: 30 Years Linear or higher $\leq 1\%$ degradation in year 1, $\leq 0.4\%$ annually $\geq 87.4\%$ power at year 30</p> <p>Temperature Co-efficient: $-0.29\%/^{\circ}\text{C}$</p> <p>Global Tier-1 (BNEF): Yes</p> <p>Light Induced Degradation $\leq 0.5\%$ power loss after light stabilization</p> <p>Potential Induced Degradation:</p> <p>$\leq 1.0\%$ power loss after 96 h at 85 °C / 85% RH under ± 1000 V bias $\leq 2.0\%$ power loss after 600 h (extended PID stress) IEC 62804-1 (system voltage stress, Method A)</p> <p>Low Light & High Temperature Performance:</p> <p>$\geq 97\%$ relative efficiency at 200 W/m² irradiance under STC spectrum</p> <p>Nominal Operating Cell Temperature (NOCT):</p> <p>800 W/m², 20 °C ambient, 1 m/s wind), $\geq 80\%$ of rated STC power output.</p>

			<p>Product Warranty: 15 Years</p> <p>Performance Warranty: 30 Years Linear onsite replacement and installation.</p>
3.	Rawal Bolts	1536 Pcs	<p>Brand Power or Equivalent Through pre-drilled holes in legs foots, tightened with washers and nuts Galvanized Steel. Diameter: 8 mm Length: 2.5”</p>
4.	Fasteners	2048 pairs	<p>SS 304/316 With Spring Washer M8 / M10 / M12 (as needed)</p>
5.	Washers	2048 Pcs	<p>Zinc Plated Galvanized steel – Rectangle Washers 14 Gauge 1” X 2”</p>
6.	Rawal Bolt Washer	1536 Pcs	<p>Mild Steel Zinc Plated As per rawal bolt size</p>
7.	Rawal Bolt Compound	3 sets	<p>Brands: Crystal / Magic OR Equivalent Resin : Hardener Mix Ratio: 1:1</p>
8.	Ground Mounted Structure – L2	256 Sets	<p>L2 Pro Series - Galvanized Structure For Complete System Size: 315 KW as per 615W–640W Modules Tilt Angle: Minimum 15° OR Higher Design Life: 25 – 30 Years Wind bearing design & structure for winds upto 150km/h or higher.</p> <p>Structure Specifications:</p> <ul style="list-style-type: none"> • Round L- Type Elevated Base Foots. • Module Mounting Rails (Top Rails). • SS 304 Nuts & Bolts with Washers For assembly & fixing of all GI members. • All cut edges of structure members should be treated with paint layers to restore corrosion protection lost during cutting. • Minimum of one coat of paint shall be applied on all exposed and cut edges to enhance the overall durability, service life and structural integrity of installed ground mounted pro type L2 structure.

Passive Equipment / Work - Environmental Sciences + Epidemiology + Microbiology + Old IPS + New IPS			
1.	DC Cable – 4mm²	3500 mtr	<p>Fast Cables / Pakistan Cables / CopperGate Cables OR Equivalent</p> <p>Size: 4.0 mm² & 6.0 mm² Material Type: Single core, copper (CU) with PVC insulation Voltage Rating: 750V Current Rating: 32A (At 30°C ambient temperature) Conductor: Flexible, stranded copper Insulation: XLPO / XLPOAT 1500VDC Standards: BS EN 60228, BS 6004, IEC 60332-1 Operating Temperature: 90°C Bending Radius: 14mm (minimum) Overall Diameter (Approx.): 3.80-4.60mm Coil Length: 450 meters (coil size). Suitable for: DC applications, including solar power systems.</p>
2.	DC MCB – 4 Pole	39	<p>CHINT / MORA / TOMZN / ETEK OR Equivalent</p> <p>1000V DC – 25A/32A, 4-Pole Polarity: Bidirectional handles positive and negative lines. Arc Quenching: Built-in arc extinguishing chamber for safe DC disconnection. Material: Flame-retardant, high-strength thermoplastic casing. Standards: IEC, CE, Or Equivalent.</p>
3.	DC SPD - 3 Pole	39	<p>NOARK / ETEK OR Equivalent</p> <p>Class T1+T2 , 3-Pole DC 1200 – 1500V DC Poles: 3-Pole Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): Up to 40 kA Protection Mode: Common mode and differential mode Response Time: < 25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
4.	Multi Connectors	10 pairs	<p>HK / MORA / TOMZN</p> <p>1000–1500V DC UV-resistant plastic with copper-tinned contacts</p>

5.	DC & AC DB	03 Pcs	<p>Mild Steel – 16 Gauge – Powder Coated DB Box</p> <p>Enclosure: weatherproof powder coated GI or polycarbonate SIZE: 3' X 4' X 10" (H X W X D)</p> <p>DBs shall be designed and sized to accommodate the following equipment:</p> <ul style="list-style-type: none"> • Miniature Circuit Breakers (MCBs) • Molded Case Circuit Breakers (MCCBs) • Surge Protection Devices (SPDs) – DC Side • Terminal Blocks • Cable Gland Fittings • External Segments for AC SPD's Placement.
6.	AC Cable 95 mm ² 4 Core	1200 ft	<p>GM Cables / Fast Cables / Pakistan Cables Or Equivalent</p> <p>Type: XLPE Insulated, PVC Sheathed, Copper Conductor Conductor: High-conductivity annealed copper Cross Section: 120 mm², 4 Core (Three phase + Neutral) Voltage Rating: 0.6/1 kV (600/1000V AC) Insulation: XLPE (Cross-linked Polyethylene) for high thermal endurance Sheath: UV- and weather-resistant PVC outer sheath Copper cable for AC output connection from inverters to LT panels</p>
7.	AC MCCB	05 Pcs	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Current Rating: 250A Type: 4 Pole Voltage: 400V AC Breaking Capacity: 25kA – 50kA Standards: IEC 60947-2</p>
8.	AC SPD - 4 Pole	04	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Type: Type II SPD (AC side protection) Configuration: 4-Pole (L1, L2, L3, N) Nominal Voltage: 230/440V AC Maximum Continuous Operating Voltage (Uc): 275V–385V AC Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): 60 kA Response Time: <25 nanoseconds</p>

			<p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
9.	Cable Ties	3 packs	<p>KSS OR Equivalent</p> <p>Material: UV-stabilized Nylon 66 (Polyamide)</p> <p>Length: 9”</p> <p>Width: 4.8 mm</p> <p>optional sizes available</p> <p>Tensile Strength: ~22 kg (50 lbs.)</p> <p>Color: UV Black/White (outdoor grade)</p> <p>For neat bundling and securing of DC/AC cables. Suitable for outdoor use in solar structures due to UV resistance</p>
10.	Stainless Steel Cable Ties	2 packs	<p>Material: SS304 or SS316 (corrosion-resistant stainless steel)</p> <p>Length: 8” / 12”</p> <p>Width: 4.6 mm / 7.9 mm (standard sizes)</p> <p>Thickness: ~0.25 mm</p> <p>Temperature Resistance: –80°C to +538°C</p> <p>Locking Type: Self-locking ball-bearing mechanism.</p>
11.	Cable Silver Glands	15 Pcs	<p>Type: Weatherproof, Double Compression</p> <p>Material Options: Brass (Nickel-Silver)– preferred for outdoor & heavy-duty use</p> <p>Ingress Protection: IP65 / IP66 / IP67</p> <p>Cable Size Range: PG7 to PG48 or M12 to M63</p> <p>Thread Types: PG</p> <p>Temperature Resistance: –40°C to +100°C</p> <p>Clamping Range: Tight, secure grip on various cable diameters</p> <p>Features: UV resistant (outdoor use)</p> <p>Flame retardant and oil-resistant</p> <p>Strain relief and seal against dust and water</p> <p>Entry points of solar junction boxes, ACDB/DCDB, inverter enclosures, and panels.</p>
12.	GI Cable Duct	3100 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance</p> <p>Duct Size: 2 inch × 2 inch (Width × Height)</p> <p>Duct Sheet Thickness: 18 Gauge (~1.2 mm)</p> <p>Duct Cover Thickness: 20 Gauge (~0.9 mm)</p> <p>Length: Standard 8 ft to 10 ft</p> <p>Construction:</p>

			<p>Ventilated or solid bottom Detachable top cover for easy cable access Sharp edge-free bends for cable safety Electro-galvanized Mounted using GI brackets, clamps, or supports on solar structure or rooftop surface.</p>
13.	GI Cable Duct	800 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 3 inch × 6 inch (Width × Height) Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p>
14.	GI Cable Duct	270 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 4 inch × 6 inch Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p>
15.	Stainless Steel Conduits	600 ft	<p>1" Stainless Steel Conduit Pipe Material: Stainless Steel Outer Diameter: 1 inch (≈ 25 mm) Wall Thickness: Schedule 40 or 80 (as required)</p>
16.	Metal Flexible Conduit Pipe	1700 ft	<p>Type: Galvanized Steel Flexible Conduit Size: 1" – 2" Material: Hot-dip galvanized steel strip, helical wound Inner Diameter: 19 mm to 50 mm depending on size Coating: PVC-coated for additional weather resistance Bending Radius: Tight and flexible for easy routing Temperature Resistance: –20°C to +100°C Ingress Protection: IP54–IP65 Flame Retardant: Yes (PVC-coated variants)</p>
17.	Installation & Transportation Services	01	<p>Installation scope includes:</p> <ul style="list-style-type: none"> • Mounting of 615W bifacial PV modules on Ground Mounted Structure. • Inverter installation. • DC/AC wiring with trays, ducts, conduits, and glands. • Installation of DC/AC MCBs, SPDs, disconnects • 6 earth bores (100–120 ft) with lightning protection. • Walkways and access platforms for O&M.

			<ul style="list-style-type: none"> • Welding, finishing, and structural alignment. • Safe and insured delivery of all equipment to project site. • Handling of fragile components like bifacial PV modules and inverters. • Transport of long and heavy items like H-beams, C-channels, and ducts. • Use of dedicated vehicles with proper strapping and padding like Cranes, Loaders etc. • Trained staff for loading, unloading, and site coordination. • Route planning for timely and secure delivery • Prevents equipment damage and project delays.
18.	Commissioning & Services	01	<p>Commissioning scope includes:</p> <ul style="list-style-type: none"> • Complete system inspection before energization • Verification of PV module connections and inverter wiring • Testing of DC/AC protection devices (MCBs, SPDs, disconnects) • Insulation resistance and continuity checks for all cables. • Configuration and startup of inverters. • Synchronization with utility grid and protection relay testing. • Performance ratio (PR) testing and output verification. • Monitoring system setup and remote access configuration. • Handover report with complete commissioning documentation • Design, engineering & system layout Planning Technical documentation and drawings Logistics & site coordination • Utility liaison & net metering support • After-sales service and technical assistance • 3 Years after sales service
19.	Net Metering & Processing	01	<p>Net Metering scope includes:</p> <ul style="list-style-type: none"> • Complete Job as per sanction load • Preparation and submission of complete Net-Metering application documents in line with NEPRA Net-Metering Regulations. • Green Meter Application & Demand Notice as per DISCO requirements. • Coordination and facilitation of WAPDA/DISCO technical survey of the plant.

			<ul style="list-style-type: none"> • Inclusion of all technical details, single-line diagrams (SLD), equipment certifications, and site layouts. • Issuance of Distribution License, AEDB (Alternative Energy Development Board). • Preparation and execution of agreements with DISCO and GENCO for Net-Metering interconnection. • Arrangement of on-site physical inspection and practical checking by DISCO engineers. • Sanction load to be adjusted and upgraded in coordination with DISCO. • Conduct a Load Flow Study for the interconnection point, ensuring compliance with NEPRA Grid Code and stability of the distribution network. • Rectification of any observations raised until formal approval is granted. • Handover of Net-Metering License issued by AEDB/NEPRA to the client. • Successful synchronization of the PV system with the utility grid under the approved sanctioned load.
20.	Earth Bores	06	<p>100 to 120 ft Depth</p> <p>06 deep-earth bores drilled at strategic points across the site (depending on soil resistivity)</p> <p>Pipe-in-pipe method using corrosion-resistant GI pipe (1.5"), perforated for deep conductivity.</p> <p>Stable earth resistance ≤ 2 ohms as per IEC Standards.</p>
21.	Earth Chemical	02 Gallons	<p>Brand: Marshal OR Equivalent</p> <p>Type: Conductive Gel / Ground Enhancement Material (GEM)</p> <p>Used in all 6 bores with GI pipe electrode for long-term resistance stability.</p>
22.	Lightning Arresters ESE	02	<p>Height and location as per IS 2309 / IEC 62305 lightning protection zone (LPZ) design</p> <p>Down conductors properly clamped and routed to reduce step potential. All connections and joints cad-welded or mechanically fastened for durability</p> <p>ESE Lightning Arrester with $\Delta T = 71\mu s$, providing a protection radius of up to 120 m, mounted on 3m hot dip galvanized mast, complete with chemical Earthing system ($\leq 2 \Omega$).</p> <p>Product Height: 400 mm</p>

23.	Earthing Cables	520 ft	Conductor: 50 mm ² high-purity copper (single core, bare) Interconnecting lightning arresters, inverters, and protection boxes to earth pits High conductivity, corrosion resistant and suitable for outdoor burial.
		3200 ft	Conductor: 6 mm ² high-purity copper (single core, bare) Interconnecting panel to panel Earthing and protection boxes to earth pits. High conductivity, corrosion resistant and suitable for outdoor burial.
24.	Civil Work	1024 blocks	For solar PV installations reinforced concrete (RCC) pedestal blocks shall be constructed at base as per requirement to ensure long-term structural stability, wind resistance, and load-bearing capacity. Each concrete pedestal will have the following specifications: Backleg Block Size: 10” x 10“ x 6” (Length x Width x Height) Frontleg Block Size: 10” x 10“ x 3”(Length x Width x Height) (Ground Mounted Structure – (1024 Blocks) Material Mix Ratio: 1:3:4 Material: Reinforced cement concrete (RCC) using M20 grade concrete Base Preparation: Compacted soil base with a PCC (Plain Cement Concrete) layer for leveling Purpose: To securely anchor vertical steel pillars of the shed-mounted solar support structure
25.	Genset Monitoring System	01	The EPC Contractor shall provide, install, configure, and commission a Supervisory Control and Data Acquisition (SCADA) System for real-time monitoring, control, and data acquisition of the 315 KW solar PV plant. Monitoring system includes: <ul style="list-style-type: none"> • DSE/DIEF or Equivalent • Data acquisition, performance analytics • Fault detection, and reporting. • Fault and alarm detection • DC and AC voltage & current • Inverter performance • Energy generation (kWh) Monitoring Parameters <ul style="list-style-type: none"> • Compatible with industry-standard inverters and energy meters.

			<ul style="list-style-type: none"> • Remote access for system control and monitoring. • Historical data logging and trend analysis
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Solar Equipment – Nutrition Blocks

Active Equipment

1.	Grid-Tied PV String Inverter	01	<p>HUAWEI / SOLIS/ GOODWE OR Equivalent Inverter Rated Capacity 115 KW OR Higher Number of MPPT's / String Inputs: 8 / 10 Max Efficiency P.F > 98.5 % @ 400V OR Higher Start / MPPT range: 195 V / 195 –1000 V Communication: RS485, Wi-Fi, PLC Ingress Protection: IP65/IP66(complete enclosure, outdoor-rated) AFCI/Reverse Protection: Yes Anti-PID Function: Yes Type: Three phase PF Range / THDi: 0.8 lead, 0.8 lag <3% Surge Protection: DC Type II + AC Type II Smart PV Management Compatibility: Yes Data Logger: Yes Certifications & Compliance: IEC/EN 62109-1/-2 (safety), IEC 62116 (anti-islanding), IEC 61727 (grid interface), EN 50549-1/-2 or equivalent Warranty: 5 Years Replacement Warranty and onsite parts replacement and installation.</p>
2.	PV Modules	82 Pcs	<p>Canadian / JINKO / JA Solar / Trina OR Equivalent Technology: High-performance N-Type bifacial solar module with PERC and half-cut cell Technology, designed for industrial and utility-scale installations with superior energy yield, low degradation, and high efficiency Power Output (Pmax): 615 W+ upto 640 Watts Maximum Efficiency: 21.5% OR Higher Voc / Isc: ~50V / ~15A Vmp / Imp: ~42V / ~14.7A Cell Type: 210 mm Mono PERC / N-Type / Topcon Bifaciality: Bifacial, Dual Glass Bifacial Gain: 25% Or Higher Size / Weight: ~2278 × 1134 × 30mm / ~31 kg Glass: Dual-glass, 2.0mm tempered, AR-coated Frame: Anodized Aluminum Alloy Junction Box: IP68 Certifications & Ratings: IEC 61215 / IEC 61730 / IEC 61701 / IEC 62716</p>

			<p>Max System Voltage: 1500V DC Performance: 30 Years Linear or higher $\leq 1\%$ degradation in year 1, $\leq 0.4\%$ annually $\geq 87.4\%$ power at year 30 Temperature Co-efficient: $-0.29\%/^{\circ}\text{C}$ Global Tier-1 (BNEF): Yes Light Induced Degradation $\leq 0.5\%$ power loss after light stabilization Potential Induced Degradation: $\leq 1.0\%$ power loss after 96 h at 85°C / 85% RH under $\pm 1000\text{ V}$ bias $\leq 2.0\%$ power loss after 600 h (extended PID stress) IEC 62804-1 (system voltage stress, Method A) Low Light & High Temperature Performance: $\geq 97\%$ relative efficiency at 200 W/m^2 irradiance under STC spectrum Nominal Operating Cell Temperature (NOCT): 800 W/m^2, 20°C ambient, 1 m/s wind), $\geq 80\%$ of rated STC power output.</p> <p>Product Warranty: 15 Years Performance Warranty: 30 Years Linear onsite replacement and installation.</p>
3.	Rawal Bolts	246 Pcs	<p>Brand Power or Equivalent Through pre-drilled holes in legs foots, tightened with washers and nuts Galvanized Steel. Diameter: 8 mm Length: 2.5"</p>
4.	Fasteners	328 pairs	<p>SS 304/316 With Spring Washer M8 / M10 / M12 (as needed)</p>
5.	Washers	328 Pcs	<p>Zinc Plated Galvanized steel – Rectangle Washers 14 Gauge 1" X 2"</p>
6.	Rawal Bolt Washer	246 Pcs	<p>Mild Steel Zinc Plated As per rawal bolt size</p>
7.	Rawal Bolt Compound	1 sets	<p>Brands: Crystal / Magic OR Equivalent Resin : Hardener Mix Ratio: 1:1</p>
8.	Ground Mounted	41 Sets	<p>L2 Pro Series - Galvanized Structure For Complete System Size: 50 KW as per 615W–640W</p>

	Structure – L2		<p>Modules Tilt Angle: Minimum 15° OR Higher Design Life: 25 – 30 Years Wind bearing design & structure for winds upto 150km/h or higher.</p> <p>Structure Specifications:</p> <ul style="list-style-type: none"> • Round L- Type Elevated Base Foots. • Module Mounting Rails (Top Rails). • SS 304 Nuts & Bolts with Washers For assembly & fixing of all GI members. • All cut edges of structure members should be treated with paint layers to restore corrosion protection lost during cutting. • Minimum of one coat of paint shall be applied on all exposed and cut edges to enhance the overall durability, service life and structural integrity of installed ground mounted pro type L2 structure.
Passive Equipment / Work - Nutrition Blocks			
1.	DC Cable – 4mm²	1200 mtr	<p>Fast Cables / Pakistan Cables / CopperGate Cables OR Equivalent</p> <p>Size: 4.0 mm² & 6.0 mm² Material Type: Single core, copper (CU) with PVC insulation Voltage Rating: 750V Current Rating: 32A (At 30°C ambient temperature) Conductor: Flexible, stranded copper Insulation: XLPO / XLPOAT 1500VDC Standards: BS EN 60228, BS 6004, IEC 60332-1 Operating Temperature: 90°C Bending Radius: 14mm (minimum) Overall Diameter (Approx.): 3.80-4.60mm Coil Length: 450 meters (coil size). Suitable for: DC applications, including solar power systems.</p>
2.	DC MCB – 4 Pole	12 Pcs	<p>CHINT / MORA / TOMZN / ETEK OR Equivalent</p> <p>1000V DC – 25A/32A, 4-Pole Polarity: Bidirectional handles positive and negative lines. Arc Quenching: Built-in arc extinguishing chamber for safe DC disconnection. Material: Flame-retardant, high-strength thermoplastic casing. Standards: IEC, CE, Or Equivalent.</p>
3.	DC SPD - 3 Pole	12 Pcs	<p>NOARK / ETEK OR Equivalent</p> <p>Class T1+T2 , 3-Pole DC 1200 – 1500V DC Poles: 3-Pole Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): Up to 40 kA</p>

			<p>Protection Mode: Common mode and differential mode Response Time: < 25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
4.	Multi Connectors	3 pairs	<p>HK / MORA / TOMZN 1000–1500V DC UV-resistant plastic with copper-tinned contacts</p>
5.	DC & AC DB	01	<p>Mild Steel – 16 Gauge – Powder Coated DB Box Enclosure: weatherproof powder coated GI or polycarbonate SIZE: 3’ X 4’ X 10” (H X W X D)</p> <p>DBs shall be designed and sized to accommodate the following equipment:</p> <ul style="list-style-type: none"> ● Miniature Circuit Breakers (MCBs) ● Molded Case Circuit Breakers (MCCBs) ● Surge Protection Devices (SPDs) – DC Side ● Terminal Blocks ● Cable Gland Fittings ● External Segments for AC SPD’s Placement.
6.	AC Cable 95 mm² 4 Core	400 ft	<p>GM Cables / Fast Cables / Pakistan Cables Or Equivalent Type: XLPE Insulated, PVC Sheathed, Copper Conductor Conductor: High-conductivity annealed copper Cross Section: 120 mm², 4 Core (Three phase + Neutral) Voltage Rating: 0.6/1 kV (600/1000V AC) Insulation: XLPE (Cross-linked Polyethylene) for high thermal endurance Sheath: UV- and weather-resistant PVC outer sheath Copper cable for AC output connection from inverters to LT panels</p>
7.	AC MCCB	02	<p>CHINT / MORA / TOMZN Or Equivalent Current Rating: 250A Type: 4 Pole</p>

			<p>Voltage: 400V AC Breaking Capacity: 25kA – 50kA Standards: IEC 60947-2</p>
8.	AC SPD - 4 Pole	02	<p>CHINT / MORA / TOMZN Or Equivalent</p> <p>Type: Type II SPD (AC side protection) Configuration: 4-Pole (L1, L2, L3, N) Nominal Voltage: 230/440V AC Maximum Continuous Operating Voltage (Uc): 275V–385V AC Nominal Discharge Current (In): 40 kA Maximum Discharge Current (Imax): 60 kA Response Time: <25 nanoseconds</p> <p>Standards:</p> <ul style="list-style-type: none"> ● UKCA ● VDE ● TUV Rhineland ● CE OR Equivalent
9.	Cable Ties	2 packs	<p>KSS OR Equivalent</p> <p>Material: UV-stabilized Nylon 66 (Polyamide) Length: 9” Width: 4.8 mm optional sizes available Tensile Strength: ~22 kg (50 lbs.) Color: UV Black/White (outdoor grade) For neat bundling and securing of DC/AC cables. Suitable for outdoor use in solar structures due to UV resistance</p>
10.	Stainless Steel Cable Ties	1 packs	<p>Material: SS304 or SS316 (corrosion-resistant stainless steel)</p> <p>Length: 8” / 12” Width: 4.6 mm / 7.9 mm (standard sizes) Thickness: ~0.25 mm Temperature Resistance: –80°C to +538°C Locking Type: Self-locking ball-bearing mechanism.</p>
11.	Cable Silver Glands	15 Pcs	<p>Type: Weatherproof, Double Compression Material Options: Brass (Nickel-Silver)– preferred for outdoor & heavy-duty use Ingress Protection: IP65 / IP66 / IP67 Cable Size Range: PG7 to PG48 or M12 to M63 Thread Types: PG</p>

			<p>Temperature Resistance: -40°C to +100°C Clamping Range: Tight, secure grip on various cable diameters Features: UV resistant (outdoor use) Flame retardant and oil-resistant Strain relief and seal against dust and water Entry points of solar junction boxes, ACDB/DCDB, inverter enclosures, and panels.</p>
12.	GI Cable Duct	1800 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 2 inch × 2 inch (Width × Height) Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft Construction: Ventilated or solid bottom Detachable top cover for easy cable access Sharp edge-free bends for cable safety Electro-galvanized Mounted using GI brackets, clamps, or supports on solar structure or rooftop surface.</p>
13.	GI Cable Duct	500 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 3 inch × 6 inch (Width × Height) Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p>
14.	GI Cable Duct	100 ft	<p>Material: Galvanized Iron (GI), zinc-coated for corrosion resistance Duct Size: 4 inch × 6 inch Duct Sheet Thickness: 18 Gauge (~1.2 mm) Duct Cover Thickness: 20 Gauge (~0.9 mm) Length: Standard 8 ft to 10 ft</p>
15.	Stainless Steel Conduits	200 ft	<p>1" Stainless Steel Conduit Pipe Material: Stainless Steel Outer Diameter: 1 inch (≈ 25 mm) Wall Thickness: Schedule 40 or 80 (as required)</p>
16.	Metal Flexible Conduit Pipe	525 ft	<p>Type: Galvanized Steel Flexible Conduit Size: 1" – 2" Material: Hot-dip galvanized steel strip, helical wound Inner Diameter: 19 mm to 50 mm depending on size Coating: PVC-coated for additional weather resistance</p>

			<p>Bending Radius: Tight and flexible for easy routing Temperature Resistance: –20°C to +100°C Ingress Protection: IP54–IP65 Flame Retardant: Yes (PVC-coated variants)</p>
17.	Installation & Transportation Services	01	<p>Installation scope includes:</p> <ul style="list-style-type: none"> • Mounting of 615W bifacial PV modules on Ground Mounted Structure. • Inverter installation. • DC/AC wiring with trays, ducts, conduits, and glands. • Installation of DC/AC MCBs, SPDs, disconnects • 2 earth bores (100–120 ft) with lightning protection. • Walkways and access platforms for O&M. • Welding, finishing, and structural alignment. • Safe and insured delivery of all equipment to project site. • Handling of fragile components like bifacial PV modules and inverters. • Transport of long and heavy items like H-beams, C-channels, and ducts. • Use of dedicated vehicles with proper strapping and padding like Cranes, Loaders etc. • Trained staff for loading, unloading, and site coordination. • Route planning for timely and secure delivery • Prevents equipment damage and project delays.
18.	Commissioning & Services	01	<p>Commissioning scope includes:</p> <ul style="list-style-type: none"> • Complete system inspection before energization • Verification of PV module connections and inverter wiring • Testing of DC/AC protection devices (MCBs, SPDs, disconnects) • Insulation resistance and continuity checks for all cables. • Configuration and startup of inverters. • Synchronization with utility grid and protection relay testing. • Performance ratio (PR) testing and output verification. • Monitoring system setup and remote access configuration. • Handover report with complete commissioning documentation • Design, engineering & system layout Planning Technical documentation and drawings Logistics &

			<p>site coordination</p> <ul style="list-style-type: none"> • Utility liaison & net metering support • After-sales service and technical assistance • 3 Years after sales service
19.	Net Metering & Processing	01	<p>Net Metering scope includes:</p> <ul style="list-style-type: none"> • Complete Job as per sanction load • Preparation and submission of complete Net-Metering application documents in line with NEPRA Net-Metering Regulations. • Green Meter Application & Demand Notice as per DISCO requirements. • Coordination and facilitation of WAPDA/DISCO technical survey of the plant. • Inclusion of all technical details, single-line diagrams (SLD), equipment certifications, and site layouts. • Issuance of Distribution License, AEDB (Alternative Energy Development Board). • Preparation and execution of agreements with DISCO and GENCO for Net-Metering interconnection. • Arrangement of on-site physical inspection and practical checking by DISCO engineers. • Sanction load to be adjusted and upgraded in coordination with DISCO. • Conduct a Load Flow Study for the interconnection point, ensuring compliance with NEPRA Grid Code and stability of the distribution network. • Rectification of any observations raised until formal approval is granted. • Handover of Net-Metering License issued by AEDB/NEPRA to the client. • Successful synchronization of the PV system with the utility grid under the approved sanctioned load.
20.	Earth Bores	02	<p>100 to 120 ft Depth 2 deep-earth bores drilled at strategic points across the site (depending on soil resistivity) Pipe-in-pipe method using corrosion-resistant GI pipe (1.5"), perforated for deep conductivity. Stable earth resistance ≤ 2 ohms as per IEC Standards.</p>
21.	Earth Chemical	01 Gallon	<p>Brand: Marshal OR Equivalent Type: Conductive Gel / Ground Enhancement Material</p>

		s	(GEM) Used in all 2 bores with GI pipe electrode for long-term resistance stability.
22.	Lightning Arresters ESE	01	Height and location as per IS 2309 / IEC 62305 lightning protection zone (LPZ) design Down conductors properly clamped and routed to reduce step potential. All connections and joints cad-welded or mechanically fastened for durability ESE Lightning Arrester with $\Delta T = 71\mu s$, providing a protection radius of up to 120 m, mounted on 3m hot dip galvanized mast, complete with chemical Earthing system ($\leq 2 \Omega$). Product Height: 400 mm
23.	Earthing Cables	200 ft	Conductor: 50 mm ² high-purity copper (single core, bare) Interconnecting lightning arresters, inverters, and protection boxes to earth pits High conductivity, corrosion resistant and suitable for outdoor burial.
		1200 ft	Conductor: 6 mm ² high-purity copper (single core, bare) Interconnecting panel to panel Earthing and protection boxes to earth pits. High conductivity, corrosion resistant and suitable for outdoor burial.
24.	Civil Work	164 blocks	For solar PV installations reinforced concrete (RCC) pedestal blocks shall be constructed at base as per requirement to ensure long-term structural stability, wind resistance, and load-bearing capacity. Each concrete pedestal will have the following specifications: Backleg Block Size: 10” x 10“ x 6” (Length x Width x Height) Frontleg Block Size: 10” x 10“ x 3”(Length x Width x Height) (Ground Mounted Structure – 164 Blocks) Material Mix Ratio: 1:3:4 Material: Reinforced cement concrete (RCC) using M20 grade concrete Base Preparation: Compacted soil base with a PCC (Plain Cement Concrete) layer for leveling Purpose: To securely anchor vertical steel pillars of the shed-mounted solar support structure

<p>25.</p>	<p>Genset Monitoring System</p>	<p>01</p>	<p>The EPC Contractor shall provide, install, configure, and commission a Supervisory Control and Data Acquisition (SCADA) System for real-time monitoring, control, and data acquisition of the 50 KW solar PV plant.</p> <p>Monitoring system includes:</p> <ul style="list-style-type: none"> • DSE/DIEF or Equivalent • Data acquisition, performance analytics • Fault detection, and reporting. • Fault and alarm detection • DC and AC voltage & current • Inverter performance • Energy generation (kWh) Monitoring Parameters <ul style="list-style-type: none"> • Compatible with industry-standard inverters and energy meters. • Remote access for system control and monitoring. • Historical data logging and trend analysis
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Technical Evaluation Criteria for Solar Equipment -:

- The Bidders who have duly complied with the Eligibility / Qualification and Evaluation Criteria will be eligible for further processing.
- The Bids which do not confirm to the Technical Specifications or Bid conditions or Bids from the Bidders without adequate capabilities for supply of Goods/Items/Services will be rejected.
- The Eligible/Technically Qualified Bidders will be considered for further evaluation.
- The Technical proposals shall be evaluated by the technical evaluation committee in the light of following evaluation criteria:

Category	Description	Marks
Legal (Mandatory)	Certificate of Company/ Firm Registration / Incorporation under the laws of Pakistan.	Mandatory
	Valid Income Tax Registration.	Mandatory
	Valid General Sales Tax Registration (Status = Active with FBR as on the date of submission)	Mandatory
	Submission of undertaking on legal valid and attested e-stamp paper of Rs. 100/- that the firm is not blacklisted by PPRA / Procuring Agency.	Mandatory
Technical (Mandatory)	Must have 03 Years' Experience with Principal / Manufacturer as Distributor for Inverter and Solar Panel	Mandatory
	The Quoted Brand for Inverter and Solar Panels should be USA, EU, China or Equivalent	Mandatory
	Bidder should provide an authority letter from the Principal specifically to participate in this tender. (MAF)	Mandatory
	The Bidder must possess and produce an AEDB license belonging in C1 Category in its name	Mandatory
	Valid ISO Certification ISO-9001 and ISO-50001	Mandatory
	Valid PEC Registration Certificate	Mandatory
	Minimum 3 Solar Deployments each at least of 1 MW or Above with cumulative 10MW installations (PO Required) in past 3 years with Govt. / Semi Govt. Departments / Private Industries	Mandatory
	OEM/Principal/Distributor must have a fully functional office in Pakistan.	Mandatory
	Single System Integrator, no joint ventures will be allowed. Items will be supplied as a solution package deal.	Mandatory
	Three years on-site warranty, NBD replacement, support and maintenance for the entire Solution would be required.	Mandatory
	Compliance to the technical specifications of all items to be procured.	Mandatory

Note:

Only the firms which fulfill the above mentioned mandatory legal and technical criteria will qualify for Financial/Technical Points Grading.

PARAMETERS OF FINANCIAL/ TECHNICAL GRADING CRITERIA

The Firm / Company securing less than 70% marks will be disqualified.

Category	Description	Marks	
Company Profile (Max Points 10)	03 to < 04 years	5	
	04 to < 05 years	8	
	05 years and above	10	
Financial (Max Points 20)	Last Audited Annual Turnover	Rs. 100-199 million	5
		Rs. 200-249 million	8
		Rs. 250 and above	10
	Audited Financial Reports	For the Past 3 Years	5 (1.67 per year)
Income Tax Returns	For the Past 3 Years	5 (1.67 per year)	
Relevant Projects (Max Points 15)	Solar Projects in the Past 03 Years with Provincial or Federal Government Department, Agency, Organization, Autonomous body or Private Industry.	Each Project of 1 MW capacity or above 15 (Each Project Carry 03 Marks)	
Human Resource PEC Registered (Max Points 10)	Total Number of PEC Registered Engineers (List of Staff, who are on company's payroll must be attached.)	01 – 10	5
		11 – 19	8
		20 and above	10
Human Resource Permanent Technical (Max Points 10)	Total Number of Technical Employees including Technical / Professional (List of Staff, who are on company's payroll must be attached.)	20 – 35	5
		36 – 49	8
		50 and above	10
Operational 24 / 7 NOC (Max Points 05)	Specialized 24/7 operational Network Operations Control and Monitoring Center (Evidence of NOC Employees must be attached)	Operational	5
No. of Technical Employees in NOC (Max Points 10)	Total Number of Technical / Professional Employees in NOC (Evidence of NOC Employees must be attached)	3 – 4	5
		4 – 5	8
		6 or Above	10
ISO Certification (Max Points 10)	Valid ISO Certifications (ISO-9001, ISO-50001, ISO-14001, ISO-45001)	10 (Each Certificate carry 2.5 Marks)	
Project Completion and Satisfactory Certificates (Max Points 10)	Project Completion along with Satisfactory after Sale Service Certificate from Provincial or Federal Government Department, Agency, Organization, Autonomous body or Private Industry.	10 (Each Certificate carry 2 Marks)	

General Terms & Conditions:
UVAS may waive any minor informality, non-conformity or irregularity in bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any bidder.
Bidder is required to submit data sheet of quoted equipment (Exact Model) in support of their quoted technical specifications.
The partner should be able to provide long term support and services (back to back with OEM/Principal) which will be verifiable from Principal.
Vendors will provide spare part list, with quantities to meet SLA requirements.
Tender will be evaluated on turnkey basis for deployment of complete Solar Solution i.e Overall Lowest Bidder in Lot.
The bidder is required to provide principal's shipment document mentioning equipment make/ model, part numbers and serial numbers that the equipment has been shipped against the order placed for UVAS.
Verifiable documentary proofs for all above requirements are mandatory otherwise rejected.
Vendor/ Supplier will be responsible for installation of the supplied equipment in client's environment as per client's requirements.

Warranty Terms & Conditions:
All supplied inverters shall carry a minimum 5-year OEM replacement warranty covering any manufacturing defects, functional failures, or performance degradation. The warranty shall be issued directly by the manufacturer (OEM), not by a distributor or local reseller.
The company shall ensure that, in case of failure of any equipment (e.g Inverters & Panels) within warranty period, backup unit of the same capacity must be provided and installed up to next business day uptill permanent replacement unit is installed, at no additional cost to the University.
Modules warranty: Minimum 15 years against material defects, manufacturing faults, and workmanship.
Module Performance Warranty: Minimum 30 years linear power output warranty ensuring not less than, 98% of nominal power output in the first year, and Maximum 0.4% annual degradation from Year 2 onwards, ensuring at least 87.4% power output at Year 30.
All electric components and breakers like MCCBs, MCBs and SPDs must be 1 years warranted.

Section-IV: Bid Data Sheet

Notes on the Bid Data Sheet

Section IV is intended to assist the Procuring Agency in providing the specific information in relation to corresponding clauses in the Instructions to Bidders included in Section II, and has to be prepared separately for each specific procurement.

The Procuring Agency should specify in the Bid Data Sheet information and requirements specific to the circumstances of the Procuring Agency, the processing of the procurement, the applicable rules regarding Bid price and currency, and the Bid evaluation criteria that will apply to the Bids. In preparing Section IV, the following aspects should be checked:

- (a) Information that specifies and complements provisions of Section II must be incorporated.
- (b) Amendments and/or supplements, if any, to provisions of Section II as necessitated by the circumstances of the specific procurement, must also be incorporated.
- (c) The Procuring Agency should formulate Bid Data Sheet in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract contents of a generalized Bid Data Sheet may be as follows:]

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

[Instructions for completing the Bid Data Sheet are provided, as needed, in the notes in italics mentioned for the relevant ITB Clauses which may be deleted while submitting the Bids.]

A. Introduction		
BDS Clause Number	ITB Number	Amendments of, and Supplements to, Clauses in the Instruction to Bidders
1.	2.1.1	<ul style="list-style-type: none"> Name of Procuring Agency: University of Veterinary & Animal Sciences, Lahore The subject of Procurement is: Procurement & Installation of Solar System at City Campus, UVAS, Lahore Commencement date for delivery of Goods: After Issuance of Letter of Acceptance (Award Letter / Work Order / Purchase Order)
2.	2.1.2	<ul style="list-style-type: none"> Financial year for the operations of the Procuring Agency: 2025-26 Name of Project/ Grant (Development or Non Development): Non Development Name of financing institution: University of Veterinary & Animal Sciences (UVAS)
3.	2.1.3 (iv)	Maximum number of members in the joint venture, consortium or association shall be: <i>[insert the number]</i> . J.V. form 8.2 should be followed.
4.		Ineligible Country(s): NA
5.	2.3.6(iii)	Demonstration of authorization by manufacturer: <i>[required or not required]</i> form 8.3 should be followed.
B. Bidding Documents		
6.	2.2.2	<ul style="list-style-type: none"> The address for clarification of Bidding Documents: Secretary Procurement Committee, Purchase Section, University of Veterinary & Animal Sciences, UVAS, Lahore Pre-bid meeting will not be held
7.	2.2.2	Pre-bid meeting will not be held
8.	2.3.9	The number of bidding documents to be completed and returned is in one original and <i>[number of copies of original if required by the procuring agency]</i>
C. Bid Price, Currency, Language and Country of Origin		
9	2.3.1	Language: English
10	2.3.4	The Price quoted shall be inclusive of all applicable taxes
11.	2.3.4	The Price shall be fixed
12.	2.1.4 (ii)	Country of Origin
D. Preparation and Submission of Bids		
13.	2.1.3	<p>Qualification Criteria/Knock down criteria.</p> <p><i>[Specify, requirement for a minimum requirements for a Bidder to participate in the Bidding process which, may include but not limited to the following: -</i></p> <ul style="list-style-type: none"> <i>i. Minimum relevant experience required for bidder and product</i>

		<p>ii. Registration of the Bidder with relevant forums/ organizations.</p> <p>iii. Registration with relevant tax authority i.e. FBR/PRA etc. as active tax payer.</p> <p>iv. Minimum financial soundness based on average turn over for last three years</p> <p>v. Affidavit to the effect that:-</p> <ul style="list-style-type: none"> • Bidder is not currently blacklisted by the Procuring Agency. • The documents/photocopies provided with Bid are authentic. In case of any fake/bogus document found at any stage, the Bidder shall be blacklisted as per Law/ Rules. • The provided information is correct. <p>vi. Bidder is authorized dealer for supply of goods.....</p> <p>vii.(as per requirement of the Procuring Agency).</p>						
14.	2.3.6&2.3.7	Spare parts required for ____ [number] of years of operation.						
15.	2.2.2	<p>Bid shall be submitted to: University of Veterinary & Animal Sciences (UVAS)</p> <p>Street address : Sheikh Abdul Qadir Jillani (Out Fall) Road</p> <p>Building/Plot No. Admin Block</p> <p>Floor/Room No.: 1st Floor, Room No. 116</p> <p>City/Town : Lahore</p>						
16.	2.4.2	<p>The deadline for bid submission is</p> <p>a. Day: Thursday</p> <p>Date: 26-02-2026 Time: 11:00 AM</p>						
17.	2.5.1	<p>Date / Month / Year / Time and place for bid opening</p> <p>a. UVAS Administration Block, Purchase Section Room No.116</p> <p>Date: 26-02-2026 Time: 11:30 AM</p>						
18.	2.6.2	Amount of Performance Guarantee is --						
19.	2.3.8	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sr. No.</th> <th>Bid Security (Refundable) 2% in pak Rs.</th> <th>Estimated Price in Pak Rs.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2,000,000/-</td> <td style="text-align: center;">100,000,000/-</td> </tr> </tbody> </table>	Sr. No.	Bid Security (Refundable) 2% in pak Rs.	Estimated Price in Pak Rs.	1	2,000,000/-	100,000,000/-
Sr. No.	Bid Security (Refundable) 2% in pak Rs.	Estimated Price in Pak Rs.						
1	2,000,000/-	100,000,000/-						
20.	2.3.9	Bid validity period after opening of the Bid is: 120 Days.						
21.	2.3.9	Number of copies of the Bid to be provided are: N/A.						
E. Opening and Evaluation of Bids								
22.	2.5.1	<p>The Bid opening shall take place at:</p> <p>Street address: Sheikh Abdul Qadir Jillani (Out fall) Road</p> <p>Building/Plot No.: Administration Block</p> <p>Floor/Room No: 1st Floor Room No. 116</p> <p>City/Town: Lahore</p> <p>Country: <u>Pakistan</u></p> <p>Day : Thursday</p> <p>Date: 26-02-2026</p> <p>Time : 11:30 AM</p>						
23.	2.3.5	The currency that shall be used for Bid evaluation and comparison purposes to						

		<p>convert all Bid prices expressed in various currencies is: PRK</p> <p>The source of exchange rate shall be: <i>[insert the source]</i></p> <p>The date of exchange rate shall be: <i>[insert date/month/year of exchange rate]</i></p>
F. Bid Evaluation Criteria		
24.	2.5.8	<p>Criteria to Bid evaluation.</p> <p><i>[As per rule-31 of PPR-14, a Procuring Agency is required to formulate evaluation criteria listing all the relevant information against which a Bid is to be evaluated.]</i></p> <p><i>[The Procuring Agency should formulate Evaluation Criteria in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). The Procuring Agency while formulating the qualification/evaluation criteria must also consider the procedure of Bidding to be adopted i.e. single stage one envelop/single stage two envelop procedure. It has been observed that in case of single stage one envelope Bidding procedure, only qualification criteria/knock down clauses are provided and no separate evaluation criteria is given keeping in view the simple nature of the procurement. But, considering the nature and quantum of the procurement, a Procuring Agency should formulate evaluation criteria even in single stage one envelop Bidding procedure (if so required). Such criteria may however be of a simple nature.]</i></p> <p><i>[For a standard procurement, contents of a generalized Evaluation Criteria may include as follows:]</i></p>

G. Award of Contract

2.6.5	Percentage for quantity increase or decrease is: 15%
2.6.2	The Performance Guarantee shall be --
2.6.2	Performance Security (or guarantee) shall be in the form of: <i>Bank Guarantee or CDR</i>

Section-V: General Conditions of Contract

[The Procuring Agency should formulate General Condition of Contract in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable) However, for a standard procurement/contract contents of a generalized General Conditions of Contract may be as follows:]

1. Definitions

1.1 In this Contract, the following terms shall be interpreted as indicated:

- (a) "The Contract" means the agreement entered into between the Procuring Agency and the Supplier, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- (b) "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations.
- (c) "The Goods" means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Procuring Agency under the Contract.
- (d) "The Services" means those services ancillary and related to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training, maintenance & repair and other such obligations of the Supplier covered under the Contract.
- (e) "GCC" means the General Conditions of Contract contained in this section.
- (f) "SCC" means the Special Conditions of Contract.
- (g) "The Procuring Agency" means the organization purchasing the Goods & Services, as named in SCC.
- (h) "The Procuring Agency's country" is the country named in SCC.
- (i) "The Supplier" means the Bidder or firm supplying the Goods and Services under this Contract.

(j) "The Project Site," where applicable, means the place or places named in SCC.

(k) "Day" means calendar day.

2. Application

2.1. These General Conditions shall apply to the extent that they are not superseded by provisions of other parts of the Contract.

3. Country of Origin

[where applicable]

3.1. All Goods and Services supplied under the Contract shall have their origin in the countries and territories eligible under the rules, as further elaborated in the SCC.

3.2. For purposes of this Clause, "origin" means the place where the Goods were mined, grown, or produced, or from ~~which~~ **where** the Services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new product is obtained 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 Supplier. In any case, the requirements of rules 10 & 26, PPR-14, shall be followed.

4. Standards

4.1. The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standards appropriate to the Goods' country of origin. Such standards shall be the latest issued by the concerned institution.

5. Use of Contract Documents and Information; Inspection and Audit by the procuring agency.

5.1. The Supplier shall not, without the Procuring Agency's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Procuring Agency in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2. The Supplier shall not, without the Procuring Agency's prior written consent, make use of any document or information enumerated in GCC Clause 5.1 except for purposes of executing the Contract.

5.3. Any document, other than the Contract itself, enumerated in

GCC Clause 5.1 shall remain the property of the Procuring Agency and shall be returned (all copies) to the Procuring Agency on completion of the Supplier's performance under the Contract if so required by the Procuring Agency.

5.4. The Supplier shall permit the Procuring Agency to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the donors, if so required by the donors.

6. Patent Rights

6.1. The Supplier shall indemnify the Procuring Agency against all thirdparty claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the Procuring Agency's country.

7. Performance Guarantee

7.1. Within fifteen (15) days *[to be decided by the procuring agency]* of receipt of the notification of Contract award, the successful Bidder shall furnish to the Procuring Agency the Performance Guarantee in the amount specified in SCC/Bid Data Sheet & clause 2.6.2 of ITB.

7.2. The proceeds of the Performance Guarantee shall be payable to the Procuring Agency as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

7.3. As per Rule-56 of PPR-14, the performance guarantee shall be denominated in the currency of the Contract acceptable to the Procuring Agency and shall be in one of the following forms:

- (a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the Procuring Agency's country, in the form provided in the Bidding documents or another form acceptable to the Procuring Agency; or
- (b) a Bank call-deposit (CDR), Demand Draft (DD), Pay Order (PO) or Banker's cheque cashier's or certified cheque or CDR.

7.4. The performance guarantee will be discharged by the Procuring Agency and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless specified otherwise in SCC.

8. Inspections and Tests

8.1. The Procuring Agency or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Procuring Agency. SCC

and the Technical Specifications shall specify what inspections and tests the Procuring Agency requires and where they are to be conducted. The Procuring Agency shall notify the Supplier in writing, in a timely manner, of the identity of any representatives nominated for these purposes.

8.2. The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery, and/or at the Goods' final destination. If conducted on the premises of the Supplier or its subcontractor(s) (if so allowed by the Procuring Agency), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Procuring Agency.

8.3. Should any inspected or tested Goods fail to conform to the Specifications, the Procuring Agency may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Procuring Agency.

8.4. The Procuring Agency's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival in the Procuring Agency's country shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and passed by the Procuring Agency or its representative prior to the Goods' shipment from the country of origin.

8.5. Nothing in GCC Clause 8 shall in any way release the Supplier from any warranty or other obligations under this Contract.

9. Packing

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

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

10. Delivery and Documents

[in case of Framework Modality the Procuring Agency may amend these condition as per its requirements]

10.1. Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in the Schedule of Requirements. The details of shipping and/or other documents to be furnished by the Supplier are specified in SCC.

10.2. Upon delivery, the Procuring Agency shall give receiving certificate to the supplier with the statement that, "completion certificate along with satisfactory report shall be issued after due inspection as per clause-8 of GCC, which will enable the supplier to put up the bill".

[Further conditions may be incorporated by the Procuring Agency keeping in view the nature of contract, DDP, CIF, C&F, FOR, FOP for example; for a DDP contract the clause may be as follows:].

10.3. For purposes of the Contract, DDP trade term used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of *Incoterms*

10.4. Documents to be submitted by the Supplier are specified in SCC.

11. Insurance

[If required and decided by the Procuring Agency]

11.1. The Goods supplied under the Contract shall be delivered *[form of content to be decided by the Procuring Agency]* duty form paid under which risk is transferred to the buyer after having been delivered, hence *[details coverage to be decided by the Procuring Agency]* is sellers responsibility.

12. Transportation

12.1. The Supplier is required under the Contract to transport the Goods to a specified place of destination within the Procuring Agency's country, including *(details to be decided by Procuring Agency as per requirement)* insurance and storage, as shall be specified in the Contract, and related costs shall be included in the Contract Price.

13. Incidental Services

[If required and decided by the Procuring Agency]

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

- (a) satisfactory performance for specified time/ quantity on-site and/or supervision of on-site assembly and/or startup of the supplied Goods;
- (b) furnishing of tools required for assembly and/or

maintenance of the supplied Goods;

- (c) furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
- (d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
- (e) training of the Procuring Agency's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

13.2. Prices charged by the Supplier for incidental services shall be included in the Contract Price for the Goods and shall not exceed:

- (i) the prevailing rates charged for other parties by the Supplier for similar services; and
- (ii) original price of goods.

14. Spare Parts

[If required and decided by the Procuring Agency]

14.1. As specified in SCC, the Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

- (a) such spare parts as the Procuring Agency may choose to purchase from the Supplier, provided that this choice shall not relieve the Supplier of any warranty obligations under the Contract; and
- (b) in the event of termination of production of the spare parts:
 - (i) advance notification to the Procuring Agency of the pending termination, in sufficient time to permit the Procuring Agency to procure needed requirements; and
 - (ii) following such termination, furnishing at no cost to the Procuring Agency, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1. The Supplier warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models selected by the Procuring Agency, and that they incorporate all

recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the Procuring Agency's specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination.

15.2. This warranty shall remain valid for _____ *[to be decided by the Procuring Agency]* year/months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract, or for _____ *[to be decided by the Procuring Agency]* year/months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3. The Procuring Agency shall promptly notify the Supplier in writing of any claims arising under this warranty.

15.4. Upon receipt of such notice, the Supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective Goods or parts thereof, without costs to the Procuring Agency.

15.5. If the Supplier, having been notified, fails to rectify the defect(s) within the period specified in SCC, within a reasonable period, the Procuring Agency may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Procuring Agency may have against the Supplier under the Contract/relevant provision of PPR-14 including Blacklisting.

16. Payment

16.1. The method and conditions of payment to be made to the Supplier under this Contract shall be specified in SCC.

16.2. The Supplier's request(s) for payment shall be made to the Procuring Agency in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and Services performed, and by documents submitted pursuant to GCC Clause 10, and upon fulfillment of other obligations stipulated in the Contract.

16.3. As per rule-62 of PPR-14, payments shall be made promptly by

the Procuring Agency, but in no case later than thirty (30) days after submission of an invoice or claim by the Supplier, provided the work is satisfactory.

16.4. The currency of payment is *[to be decided by the Procuring Agency]*

17. Prices

17.1. Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its Bid, with the exception of any price adjustments authorized in SCC.

18. Change Orders

18.1. The Procuring Agency may at any time, by a written order given to the Supplier pursuant to GCC Clause 31, make changes within the general scope of the Contract, only if required for the successful completion of the job, in any one or more of the following:

- (a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Procuring Agency;
- (b) the method of shipment or packing;
- (c) the place of delivery; and/or
- (d) the Services to be provided by the Supplier.

18.2. If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Procuring Agency's change order. But, in no case, the overall impact of the change should exceed 15% of the contract cost and no provisions of PPR-14 should be violated.

19. Contract Amendments

19.1. Subject to GCC Clause 18, no variation in or modification of the terms of the Contract shall be made except by the mutual consent through written amendment signed by the parties. No variation in finalized brands/ makes/models shall be allowed except in special conditions where the manufacturer has stopped producing or suspended that model or the latest model of similar series or version has been launched by the manufacturer or non-availability due to international mergers of the manufacturers or similar unavoidable constraints.

- 20. Assignment** 20.1. The Supplier shall not assign the whole of contract to anybody else. However, some parts of contract or its obligations may be assigned to sub-contractors with the prior written approval of the procuring agency.
- 21. Sub-contracts** 21.1. The Supplier shall notify the Procuring Agency in the Bid of all subcontracts to be assigned under this Contract. Such notification, in the original Bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.
- 21.2. Subcontracts must comply with the provisions of GCC Clause 20.
- 22. Delays in the Supplier's Performance** 22.1. Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule prescribed by the Procuring Agency in the Schedule of Requirements–
- 22.2. If at any time during performance of the Contract, the Supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Procuring Agency in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Procuring Agency shall evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of Contract.
- 22.3. Except as provided under GCC Clause 25, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 23, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without the imposition of liquidated damages.
- 23. Liquidated Damages** 23.1. Subject to GCC Clause 25, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Procuring Agency shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in SCC. Once the maximum is reached, the Procuring Agency may consider termination of the Contract pursuant to GCC Clause 24 along with other remedies available under PPR-14.

24. Termination for Default

24.1. The Procuring Agency, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate this Contract in whole or in part:

- (a) if the Supplier fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by the Procuring Agency pursuant to GCC Clause 22;
- (b) if the Supplier fails to perform any other obligation(s) under the Contract; or
- (c) if the Supplier, in the judgment of the Procuring Agency has engaged in corrupt practices in competing for or in executing the Contract. For the purpose of this clause, corrupt practices will be defined as per Section-2 (d) of The PPRA Act, 2009.

“Corrupt practices” in respect of procurement process, shall be as given in S-2 (d) of PPRA, Act, 2009:

(d) “corrupt practice” means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official, bidder or Contractor in the procurement process or in Contract execution to the detriment of the procuring agency; or misrepresentation of facts in order to influence a procurement process or the execution of a Contract, collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial, noncompetitive levels and to deprive the procuring agency of the benefits of free and open competition and any request for, or solicitation of anything of value by any public official in the course of the exercise of his duty; it may include any of the following:

- vi. coercive practice by impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence the actions of a party to achieve a wrongful gain or to cause a wrongful loss to another party;*
- vii. collusive practice by arrangement between two or more parties to the procurement process or Contract execution, designed to achieve with or without the knowledge of the procuring agency to establish prices at artificial, noncompetitive levels for any wrongful gain;*
- viii. offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the acts of another party for wrongful gain;*
- ix. any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a*

party to obtain a financial or other benefit or to avoid an obligation;

- x. obstructive practice by harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process, or affect the execution of a Contract or deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements before investigators in order to materially impede an investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation, or acts intended to materially impede the exercise of inspection and audit process*

24.2. In the event the Procuring Agency terminates the Contract in whole or in part, pursuant to GCC Clause 24.1, the Procuring Agency may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Procuring Agency for any excess costs for such similar Goods or Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

25. Force Majeure

25.1. Notwithstanding the provisions of GCC Clauses 22, 23, and 24, the Supplier shall not be liable for forfeiture of its Performance Guarantee, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

25.2. For purposes of this clause, “Force Majeure” means an event beyond the control of the Supplier and not involving the Supplier’s fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Procuring Agency in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes. Both, the Procuring Agency and the Supplier, may agree to exclude certain widespread conditions e.g: epidemics, pandemics, quarantine restrictions etc from the purview of “Force Majeure”.

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

Force Majeure event. Any difference of opinion concerning "Force Majeure" may be decided through means given herein below.

26. Termination for Insolvency

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

27. Termination for Convenience

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

27.2. The Goods that are complete and ready for shipment (if applicable) within thirty (30) days after the Supplier's receipt of notice of termination shall be accepted by the Procuring Agency on the Contract terms and prices. For the remaining Goods, the Procuring Agency may choose:

- (a) to have any portion completed and delivered at the Contract terms and prices; and/or
- (b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Supplier.

28. Resolution of Disputes

28.1. After signing the contract or issuance of purchase order, The Procuring Agency and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

28.2. If, after thirty (30) days from the commencement of such informal negotiations, the Procuring Agency and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in SCC. These mechanisms may include, but are not restricted to, conciliation mediated by a third party, adjudication in an agreed and/or arbitration as per rule 68 of PPR-14 and in accordance with Arbitration Act-1940.

29. Governing Language

29.1. The Contract shall be written in the language specified in SCC. Subject to GCC Clause 30, the version of the Contract written in the

specified language shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

- 30. Applicable Law** 30.1. The Contract shall be interpreted in accordance with the laws of Punjab (Pakistan) unless otherwise specified in SCC.
- 31. Notices** 31.1. Any notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing or by any information technology mean for the time being in use and acceptable in ordinary course of business to the other party's address specified in SCC.
- 31.2. A notice shall be effective when delivered or on the notice's effective date, whichever is later.
- 32. Taxes and Duties** 32.1. Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods & Services to the Procuring Agency. In case of imposition of new taxes/duties or concession thereof after the deadlines for the submission of bids the effect thereof shall be borne or availed by the procuring agency as the case may be.

Section-VI. Special Conditions of Contract

Notes on the Special Conditions of Contract

Similar to the Bid Data Sheet in Section IV, the clauses in this Section are intended to assist the Procuring Agency in providing contract-specific information in relation to corresponding clauses in the General Conditions of Contract.

The provisions of Section II complement the General Conditions of Contract included in Section V, specifying contractual requirements linked to the special circumstances of the Procuring Agency, the Procuring Agency's country, the sector, and the Goods purchased. In preparing Section VI, the following aspects should be checked:

- (a) Information that complements provisions of Part one Section V must be incorporated.
- (b) Amendments and/or supplements to provisions of Section II, as necessitated by the circumstances of the specific purchase, must also be incorporated.
- (c) The Procuring Agency should formulate Special Conditions of Contract in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract contents of a generalized Special Conditions of Contract may be as follows:

Special Conditions of Contract

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

[Instructions for completing the Special Conditions of Contract are provided, as needed, in the notes in italics mentioned for the relevant SCC. Where sample provisions are furnished, they are only illustrative of the provisions that the Procuring Agency should draft specifically for each procurement. The number of SCC may increase/ vary depending on specific requirements of a specific contract.]

1. Definitions (GCC Clause 1)

GCC 1.1 (g)—The Procuring Agency is:

GCC 1.1 (h)—The Procuring Agency's country is:

GCC 1.1 (i)—The Supplier is:

Sample Provision

GCC 1.1 (j)—The Project Site is: *[if applicable]*

2. Country of Origin (GCC Clause 3)

[All countries and territories as indicated in Section IV, BDS, of the Bidding documents, as ineligible may be mentioned here]

3. Performance Guarantee (GCC Clause 7)

GCC 7.1—As per rule 56 of PPR-14, the amount of Performance Guarantee, as a percentage of the Contract Price, shall be: *[could be up to ten (10) percent of the Contract Price; it should not exceed ten (10) percent in any case.]*

[The following provision should be used in the case of Goods having warranty obligations.]

GCC 7.4—the Performance Guarantee shall be retained for to cover the Supplier's warranty obligations or defect liability period in accordance with Clause GCC 15.2

4. Inspections and Tests (GCC Clause 8)

GCC 8.6—Inspection and tests prior to shipment of Goods and at final acceptance are as follows: *[if so required by the Procuring Agency]*

5. Packing (GCC Clause 9)

GCC 9.2—*[This SCC shall supplement GCC Clause 9.2, exact details of the requisite packages be provided]*

6. Delivery and Documents

(GCC Clause 10) *[format of contract is to be decided by the Procuring Agency, however, a model provision for DDP is as follows]*

Sample provision (DDP terms)

GCC 10.3—Upon shipment, the Supplier shall notify the Procuring Agency the full details of the shipment, including Contract number, description of Goods, quantity and usual transport document. The Supplier shall mail the following documents to the Procuring Agency:

- (i) copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;
- (ii) original and two copies of the usual transport document (for example, a negotiable bill of lading, a non-negotiable sea waybill, an inland waterway document, an air waybill, a railway consignment note, a road consignment note, or a multimodal transport document) which the buyer may require to take the goods;
- (iii) copies of the packing list identifying contents of each package;
- (iv) insurance certificate;
- (v) Manufacturer's or Supplier's warranty certificate;
- (vi) Where applicable (Pre shipment/ port/ Procuring Agency Delivery site, inspection certificate), issued by the Procuring Agency nominated inspection agency, and the Supplier's factory inspection report (Inspection type depends on the nature of procurement and volume of procurement); and
- (vii) Certificate of origin.

[Other similar documents should be listed, depending upon the Incoterm provisions.]

7. Insurance

(GCC Clause 11) *[where applicable]*

GCC 11.1— The Goods supplied under the Contract shall be delivered duty paid (DDP) under which risk is transferred to the buyer after having been delivered, hence insurance coverage is sellers responsibility. Since the Insurance is sellers responsibility they may arrange appropriate coverage.

8. Incidental Services (GCC Clause 13)

GCC 13.1—Incidental services to be provided are:

[Selected services covered under GCC Clause 13 and/or other should be specified with the desired features. The price quoted in the Bid price or agreed with the selected Supplier shall be included in the Contract Price.]

9. Spare Parts

(GCC Clause 14) [where applicable]

GCC 14.1—Additional spare parts requirements are:

Sample provision

GCC 14.1—Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods. Other spare parts and components shall be supplied as promptly as possible, but in any case within six (6) months of placing the order and opening the letter of credit.

10. Warranty

(GCC Clause 15) *[may be modified by the Procuring Agency as per its requirements]*

11. Sample provision

GCC 15.2—In partial modification of the provisions, the warranty period shall be _____ hours of operation or _____ months from date of acceptance/satisfactory installation of the Goods or (_____) months from the date of shipment (if applicable), whichever occurs earlier. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the Contract. If, for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall, at its discretion, either:

(a) make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests in accordance with SCC 4,

or

(b) pay liquidated damages to the Procuring Agency in case of failure to meet the contractual guarantees. The rate of these liquidated damages shall be (_____).

[rate to be decided by the Procuring Agency but it should be reasonable]

GCC 15.4 & 15.5—The period for correction of defects in the warranty period is:

12. Payment (GCC Clause 16)

Sample provision

GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:

Payment for Goods supplied: *[to be decided by the Procuring Agency as per rule-62 of PPR-14]*

Payment may be made in Pak. Rupees in the following manner: *(to be decided by the Procuring Agency)*

- (i) L.C Modality.
- (ii) Running Bill modality.
- (iii) Lump sum modality.

13. Prices (GCC Clause 17)

Sample provision

GCC 17.1—Prices shall be fixed and shall not be adjusted.

14. Liquidated Damages (GCC Clause 23)

GCC 23.1—Applicable rate:

Maximum deduction:

[Applicable rate shall not exceed one-half (0.5) percent per week, and the maximum shall not exceed ten (10) percent of the Contract Price after that Procuring Agency may proceed for the termination of contract along with other remedies available under PPR-14.]

15. Resolution of Disputes (GCC Clause 28)

GCC 28.2—The dispute resolution mechanism to be applied pursuant to GCC Clause 28.2 shall be as follows:

As per rule-68 of PPR-14, in the case of a dispute between the Procuring Agency and the Supplier, the dispute shall be referred for arbitration in accordance with the Arbitration Act 1940.

16. Governing Language (GCC Clause 29)

GCC 29.1—The Governing Language shall be:

17. Applicable Law (GCC Clause 30)

GCC 30.1-The Contract shall be interpreted in accordance with the laws applicable in the jurisdiction of the province of Punjab (Pakistan):

18. Notices (GCC Clause 31)

GCC 31.1—Procuring Agency’s address for notice purposes:

—Supplier’s address for notice purposes:

Section-VII. Schedule of Requirements

[The Procuring Agency should formulate Schedule of Requirements in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable) However, for a standard procurement/contract contents of a generalized Schedule of Requirements may be as follows.]

Notes for Preparing the Schedule of Requirements

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

The objective of the Schedule of Requirements is to provide sufficient information to enable Bidders to prepare their Bids efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Section VIII. In addition, the Schedule of Requirements, together with the Price Schedule, should serve as a basis in the event of increase and decrease of quantity at the time of award of contract pursuant to ITB Clause 2.6.5

The date or period for delivery should be carefully specified, taking the date prescribed herein from which the Procuring Agency's delivery obligations start (i.e., notice of award, contract signature, opening or confirmation of the letter of credit).

7.1 Schedule of Requirements

[The Procuring Agency should formulate Schedule of requirement in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of schedule of requirement may be as follows.]

The delivery schedule expressed as weeks/months stipulates a delivery date which is the date at which delivery is required.

Number	Description	Quantity	Delivery schedule (shipment) in weeks/months from _____¹¹
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In order to determine the correct date of delivery hereafter specified, the Procuring Agency has taken into account the additional time that will be needed for international or national transit to the Project Site or to another common place.

Number	Description	Quantity	schedule

Note: [The Procuring Agency should provide clear cut instructions and methodology regarding the delivery schedule in case of framework contract].

¹ The Procuring Agency must specify here the date from which the delivery schedule will start. That date should be either the date of contract award, or the date of contract signature, or the date of opening of letter of credit, or the date of confirmation of the Letter of Credit, as appropriate. The Bid Form should include only a cross-reference to this Schedule.

Section-VIII: Sample Forms

[The Procuring Agency should formulate Sample Forms in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of generalized Sample Forms may be as follows.]

Notes on the Sample Forms

The Bidder shall complete and submit with its Bid the **Bid Form** and **Price Schedules** pursuant to ITB Clause 2.2.3 & 2.3.4 and in accordance with the requirements included in the Bidding documents.

When requested in the Bid Data Sheet, the Bidder should provide the **Bid Security**, either in the form included hereafter or in another form acceptable to the Procuring Agency, pursuant to ITB Clause 2.3.8

The **Contract Form**, when it is finalized at the time of contract award, should incorporate any corrections or modifications to the accepted Bid resulting from price corrections pursuant to ITB Clause 2.5.6 and GCC Clause 17, acceptable deviations e.g., payment schedule pursuant to GCC 16, spare parts pursuant to ITB Clause 2.3.6 & 2.3.7, or quantity variations pursuant to ITB Clause 2.6.5. The Price Schedule and Schedule of Requirements, deemed to form part of the contract, should be modified accordingly.

The **Performance Guarantee** and **Bank Guarantee for Advance Payment** forms should not be completed by the Bidders at the time of their Bid preparation. Only the successful Bidder will be required to provide Performance Guarantee and bank guarantee for advance payment in accordance with one of the forms indicated herein or in another form acceptable to the Procuring Agency and pursuant to GCC Clause 7.3 and SCC 10, respectively.

The **Manufacturer's Authorization** form should be completed by the Manufacturer, as appropriate, pursuant to ITB Clause 2.3.6(iii).

8.1 Bid Form

[To be signed & stamped by the Goods Provider and reproduced on the letter head. To be attached with the Bid, in case of Single Stage One Envelope Procedure and with the Financial Bid, in case of Single Stage Two Envelope Procedure]

Date: _____

To: **The Convener Procurement Committee**
UVAS, Lahore

Gentlemen and/or Ladies:

Having examined the Bidding documents including Addenda Nos. *[insert numbers]*, the receipt of which is hereby duly acknowledged, we, the undersigned, in conformity with the said Bidding documents for the sum of *[total Bid amount in words and figures]* or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, specified in the Schedule of Requirements.

If our Bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to _____ percent of the Contract Price for the due performance of the Contract, in the form prescribed by the Procuring Agency.

We agree to a Bid by this Bid for a period of *[number]* days from the date fixed to Bid opening under Clause 2.3.8 of the Instructions to Bidders, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed (*if required*), this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

[In case of single stage one envelope bidding procedure]

The Composition of our Bid is:

- a) Complete bidding document (without filling) signed and stamped by the bidder
- b) all the forms relevant to the technical and financial bids (clearly indicated on each form)

- c) All the required documents establishing eligibility of bidders/goods shall be made part of the bid.
- d) Any other document required by the procuring agency not inconsistent with PPR-14.

[In case of single stage two envelope bidding procedure],

The Composition of our bid consists on separate Technical and financial bids, detail of which is as follows:

Technical bid includes the following:-

- a) Complete bidding document (without filling) signed and stamped by the bidder
- b) All the forms relevant to the technical bid, to be reproduced on the letter head of the bidder as indicated on each individual form.
- c) Copy of bid security form along with copy of financial instruments *[to be decided by the procuring agency i.e. Bank call-deposit (CDR) / Demand Draft (DD) / Pay Order (PO) or Banker's cheque]* valid for () Days, beyond the validity of Bid in the manner as prescribed on the bid security form **8.10**.
- d) Any other document required by the procuring agency not inconsistent with PPR-14.

Financial bid includes the following:-

- a) Original Bid form (as per **form 8.1 of** Bidding documents) on letter head of the firm, duly signed and stamped.
- b) Price schedule / financial form (as per **form 8.10**) to be reproduced on the letter head of the bidder duly signed and stamped.
- c) Original Bid security form (as per **form 8.11**) along with Original financial instrument *[to be decided by the procuring agency i.e. Bank call-deposit (CDR) / Demand Draft (DD) / Pay Order (PO) or Banker's cheque]* valid for () Days, beyond the validity of Bid.
- d) *Any other document required by the procuring agency not inconsistent with PPR-14.*

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of goods provider Amount and Currency

_____	_____
_____	_____
_____	_____

(if none, state "none")

We understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this _____ day of _____ 20_____.

[signature]

[in the capacity of]

Duly authorized to sign Bid for and on behalf of _____

[The Procuring Agency should formulate Bid Form in accordance with PPR-14 keeping in view its requirements, nature of procurement. i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of a generalized Bid Form may be as provided above.]

8.2 Bidder's JV Members Information Form

{To be reproduced and signed & stamped by the lead partner and all JV members on their letter Pad, to be attached with Technical Bid in addition to the JV agreement}

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

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

RFB No.: *[insert number of RFB process]*

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

Page _____ of _____ pages

1. Bidder's Name: <i>[insert Bidder's legal name]</i>
2. Bidder's JV Member's name: <i>[insert JV's Member legal name]</i>
3. Bidder's JV Member's country of registration: <i>[insert JV's Member country of registration]</i>
4. Bidder's JV Member's year of registration: <i>[insert JV's Member year of registration]</i>
5. Bidder's JV Member's legal address in country of registration: <i>[insert JV's Member legal address in country of registration]</i>
6. Bidder's JV Member's authorized representative information Name: <i>[insert name of JV's Member authorized representative]</i> Address: <i>[insert address of JV's Member authorized representative]</i> Telephone/Fax numbers: <i>[insert telephone/fax numbers of JV's Member authorized representative]</i> Email Address: <i>[insert email address of JV's Member authorized representative]</i>
7. Attached are copies of original documents of <i>[check the box(es) of the attached original documents]</i> <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITB 4.4. <input type="checkbox"/> In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Purchaser, in accordance with ITB 4.6.
8. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

8.3. Manufacturer's Authorization Form

[To be signed and stamped by the Bidder and to be attached with Technical Bid]

[See Clause 2.3.6 (iii) of the Instructions to Bidders.]

To: ***The Convener Procurement Committee***
UVAS, Lahore

WHEREAS *[name of the Manufacturer]*, who are established and reputable manufacturers of *[name and/or description of the goods]* having factories at *[address of factory]* do hereby authorize *[name and address of Agent]* to submit a Bid, and subsequently negotiate and sign the Contract with you against for the above goods manufactured by us.

We hereby extend our full guarantee and warranty as per Clause 15 of the General Conditions of Contract for the goods offered for supply by the above firm against this Invitation to Bids.

[Signature for and on behalf of Manufacturer]

Note: This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person competent and having the power of attorney to bind the Manufacturer. It should be included by the Bidder in its Bid.

8.4. Bidder Profile Form

[To be signed & stamped by the Bidder and reproduced on the letter head. To be attached with Technical Bid]

Sr.#	Particulars
1.	Name of the company:
2.	Registered Office:
	Address:
	Office Telephone Number:
	Fax Number:
3.	Contact Person:
	Name:
	Personal Telephone Number:
	Email Address:
4.	Local office if any:
	Address:
	Office Telephone Number:
	Fax Number:
5.	Registration Details:

a) Audited Financial Statement Attachment/Income Tax Returns (Last ____ years)

Yes	No
-----	----

b) Details of Experience (Last ____ Years)

(i)	Similar Project (Agency/Department)	Item Name
(ii)	Value of total Projects/Tenders/POs	Amount

c) Staff Detail and last month Payroll

Yes	No
-----	----

[The Procuring Agency should formulate Bidder Profile Form in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of a generalized Bidder Profile Form may be as provided above.]

8.5. General Information Form

[To be signed & stamped by the Bidder and reproduced on the letter head. To be attached with Technical Bid]

	Particulars			
Company Name				
Abbreviated Name				
National Tax No.			Sales Tax Registration No	
PRA Tax No.				
No. of Employees			Company's Date of	
			Formation	

*Please attach copies of NTN, GST Registration & Professional Tax Certificate

Registered Office Address		State/Province	
City/Town		Postal Code	
Phone		Fax	
Email Address		Website Address	

[The Procuring Agency should formulate General Information Form in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of a generalized General Information Form may be as provided above.]

8.6. Affidavit

[To be printed on PKR 100 Stamp Paper, duly attested by oath commissioner. To be attached with Technical Bid]

Name: _____

(Applicant)

I, the undersigned, do hereby certify that all the statements made in the Bidding document and in the supporting documents are true, correct and valid to the best of my knowledge and belief and may be verified by employer if the Employer, at any time, deems it necessary.

The undersigned hereby authorize and request the bank, person, company or corporation to furnish any additional information requested by the *[name of Procuring Agency]* of the Punjab deemed necessary to verify this statement regarding my (our) competence and general reputation.

The undersigned understands and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the *[name of Procuring Agency]*. The undersigned further affirms on behalf of the firm that:

- (i) The firm is not currently blacklisted by the Procuring Agency.
- (ii) The documents/photocopies provided with Bid are authentic. In case, any fake/bogus document was found at any stage, the firm shall be blacklisted as per Law/ Rules.
- (iii) Affidavit for correctness of information.
- (iv) *****omitted*****

[Name of the Contractor/ Bidder/ Supplier] undertakes to treat all information provided as confidential.

Signed by an authorized Officer of the company

Title of Officer: _____

Name of Company: _____

Date: _____

[The Procuring Agency may alter or modify the details of this form in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of a generalized this Form may be as provided above.]

8.7. Performance Guarantee Form

[To be signed & stamped by the Bidder and reproduced on the letter head. To be attached with Technical Bid]

To,

**The Convener Procurement Committee
UVAS, Lahore**

WHEREAS (Name _____ of _____ the Contractor/ _____ Supplier) _____ hereinafter called "the Contractor" has undertaken, in pursuance of "INVITATION TO BID FOR THE "PROVISION OF _____" procurement of the following:

1. **[Please insert details].**

(Here in after called "the Contract").

AND WHEREAS it has been stipulated by you in the Contract that the Contractor shall furnish you with a bank guarantee by a scheduled bank for the sum specified therein as security for compliance with the Contractor's performance obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor a Guarantee;

THEREFORE WE hereby affirm that we are Guarantor and responsible to you, on behalf of the Contractor, up to a total of _____ (Amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the Contractor to be in default under the Contract, and without cavil or argument, any sum or sums as specified by you, within the limits of _____ (Amount of Guarantee) as aforesaid without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until _____ day of _____, 20__, or _____ [insert number of days] after the rectification of the Defects, whichever is later.

[NAME OF GUARANTOR]

Signature _____

Name _____

Title _____

Address _____

Seal _____

Date _____

[The Procuring Agency may alter or modify the details of this form in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of a generalized this Form may be as provided above.]

8.8. Technical Bid Form

[To be signed & stamped by the Bidder and reproduced on the letter head. To be attached with Technical Bid]

Sr. No.	Item name	Brand name with Country of Manufacturer	Make & model	Quantity	Country of Origin	Specifications dimensions

Stamp & Signature of Bidder _____

[The Procuring Agency may alter or modify the details of this form in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of a generalized this Form may be as provided above.]

8.9. Contract Form

[To be signed & stamped by the Bidder and reproduced on the letter head. To be attached with Technical Bid]

THIS AGREEMENT made on the ____ day of _____ 20____ between *[name of Procuring Agency]* Of *[country of Procuring Agency]* (hereinafter called "the Procuring Agency") on the one part and *[name of Supplier]* Of *[city and country of Supplier]* (hereinafter called "the Supplier") on the other part:

WHEREAS the Procuring Agency invited Bids for certain goods and ancillary services, viz., *[brief description of goods and services]* and has accepted a Bid by the Supplier for the supply of those goods and services in the sum of *[contract price in words and figures]* (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) the Bid Form and the Price Schedule submitted by the Bidder;
 - (b) the Schedule of Requirements;
 - (c) the Technical Specifications;
 - (d) the General Conditions of Contract;
 - (e) the Special Conditions of Contract; and
 - (f) the Procuring Agency's Notification of Award.
 - (g) Contract agreement
 - (h) Complete Bidding document
3. In consideration of the payments to be made by the Procuring Agency to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Procuring Agency to provide the goods and services and to rectify defects therein in conformity with all respects in accordance with the provisions of the Contract.
4. The Procuring Agency hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the rectification of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year mentioned above.

Signed, sealed, delivered by _____ the _____ (for the Procuring Agency)

Signed, sealed, delivered by _____ the _____ (for the Supplier)

[The Procuring Agency should formulate Contract Form in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of a generalized Contract Form may be as provided above.]

8.10. Financial Bid Form/Price Schedule

[To be signed & stamped by the Bidder and reproduced on the letter head. To be attached with Financial Bid]

Sr. No.	Item name	Specifications / dimensions	Country of Origin	Brand name, make & model	Unit price (inclusive of all taxes & duties etc.)	Quantity	Total price (inclusive of all taxes & duties etc.)	Total price (in words)
Total price in figures								
Total price in words								

Total Bid value (against which a Bid shall be evaluated) in figure.

Total Bid value (against which a Bid shall be evaluated) in words.

Note:

In case of difference between unit price and total price, unit price shall prevail and total price shall be “final”. *(Please refer ITB clause 2.5.6).*

In case of difference between amount in “words” and amount in “figures”, amount in “words” shall be considered final.

Stamp & Signature of Bidder _____

*[The Procuring Agency may alter or modify the details of this form in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable). However, for a standard procurement/contract, contents of a generalized this Form may be as provided above. **The Procuring Agency should clearly mention whether a Bid is to be evaluated item wise or package wise.**]*

8.11. Bid Security Form

[To be signed & stamped by the Bidder and reproduced on the letter head. To be attached with Financial Bid]

Whereas *[name of the Bidder]* (hereinafter called "the Bidder") has submitted its Bid dated *[date of submission of Bid]* for the supply of *[name and/or description of the goods]* (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE *[name of bank]* of *[name of country]*, having our registered office at *[address of bank]* (hereinafter called "the Bank"), are bound unto *[name of Procuring Agency]* (hereinafter called "the Procuring Agency") in the sum of for which payment well and truly to be made to the said Procuring Agency, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its Bid by the Procuring Agency during the period of Bid validity:
 - (a) fails or refuses to execute the Contract Form, if required; or
 - (b) fails or refuses to furnish the Performance Guarantee, in accordance with the Instructions to Bidders;

we undertake to pay to the Procuring Agency up to the above amount upon receipt of its first written demand, without the Procuring Agency having to substantiate its demand, provided that in its demand the Procuring Agency will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of Bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

[Signature of the bank]

[The Procuring Agency may alter or modify the details of this form in accordance with PPR-14 keeping in view its requirements, nature of procurement i.e. Bulk/Framework, item wise/package wise and form of contract to be adopted (i.e. DDP, CIF, C&F, FOR, FOP etc. if applicable) However, for a standard procurement/contract contents of a generalized this Form may be as provided above.]

Section IX- Check List

[To be signed and stamped and presented on Bidder's letter head pad]

The provision of this checklist is essential prerequisite along with submission of tenders (with technical proposal).

Sr. #	Detail	Responsive	Non-responsive
1.	2% Bid Security of estimated cost of articles / items given by the department. The Bid security must be submitted.		
2.	All required samples (if demanded) have been submitted in <i>[name of the Procuring Agency]</i> sample store.		
3.	Active Registration with Income Tax Authorities (National Tax Number NTN) at least three years old		
4.	Copy of active Registration with Sales Tax Authorities (STRN)		
5.	Copy of active Registration (Professional Tax Certificate)		
6.	Bidder s JV Member information as per form 8.2		
7.	Must have 03 Years' Experience with Principal / Manufacturer as Distributor for Inverter and Solar Panel		
8.	The Quoted Brand for Inverter and Solar Panels should be USA, EU, China or Equivalent		
9.	Bidder should provide an authority letter from the Principal specifically to participate in this tender. (MAF)		
10.	The Bidder must possess and produce an AEDB license belonging in C1 Category in its name		
11.	Valid ISO Certification ISO-9001 and ISO-50001		
12.	Valid PEC Registration Certificate		
13.	Minimum 3 Solar Deployments each at least of 1 MW or Above with cumulative 10MW installations (PO Required) in past 3 years with Govt. / Semi Govt. Departments / Private Industries		
14.	OEM/Principal/Distributor must have a fully functional office in Pakistan.		
15.	Single System Integrator, no joint ventures will be allowed. Items will be supplied as a solution package deal.		
16.	Three years on-site warranty, NBD replacement, support and maintenance for the entire Solution would be required.		
17.	Affidavit(as per form 8.6) on non-judicial e-Stamp Paper of Rs. 100/-		

	<ul style="list-style-type: none"> (i) The firm is not currently blacklisted by PPRA & Procuring Agency. (ii) The documents/photocopies provided with Bid are authentic. In case of any fake/bogus document look at any stage. They shall be black listed as per Rules / Laws. (iii) Affidavit for correctness of information. (iv) ****omitted*** <p>Affidavit for correction of information Form (as per form of Bidding documents) on letter head of the firm, duly signed and stamped.</p>		
18.	<ul style="list-style-type: none"> i. Work order / supply order / purchase order of previous relevant experience as evaluation criteria 2.5.8 ii. Company profile. Staff list along with location and address [<i>where applicable</i>]. iii. Bidders profile Form (as per 8.4 form of Bidding documents) on letter head of the firm, duly signed and stamped. 		

Stamp & Signature of Bidder _____

[The Procuring Agency may alter or modify the details of this form in accordance with PPR-14 keeping in view the nature and scope of the procurement and as per its requirements.]