

Bidding Documents
(Single Stage-Two Envelope Bidding Procedure)

**Design, Supply, Installation, Testing & Commissioning of
on-Grid Solar PV System**

[22-01-2025]

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AGPR ISLAMABAD

INVITATION FOR BIDS

INVITATION FOR BIDS

- i. Accountant General Pakistan Revenues (AGPR) “**Employer**” invites bids for the “Design, Supply, Installation, Testing & Commissioning of net-metering based Solar PV Systems of 288 KW” at its premises from the Contractors/Firms/JV.
- ii. Single Stage – Two Envelope bidding process will be adopted. Bidding Documents containing detailed terms and conditions are available at AGPR’s website i.e., [\[https://agpr.gov.pk/\]](https://agpr.gov.pk/). The Bidding Documents can be downloaded from AGPR website and from Federal Public Procurement Regulatory Authority (PPRA) website www.ppra.org.pk.
- iii. The Contractors/Firms should also be registered with FBR and must be included in active taxpayer list maintained by FBR.
- iv. All duties, taxes, insurance and other levies payable by the Contractor/Firms under the Contract, or for any other cause shall be included in the rates and prices and the total Bid Price submitted by a Contractors/Firms.
- v. Government shall deduct taxes at the rate prescribed under tax laws of Pakistan , from all payments for service rendered by a Contractor/Firm sign a contract.
- vi. All bids accompanied by a Bid Security amounting to [Rs. 9,000/-] per KW and all other documents as specified in the Bidding Documents must reach at the office of **Branch Officer (Admin-II), AGPR** on or before **22-01-2025**, at **11:00 AM**.
- vii. The Technical Bids will be opened on the same day at **11:30 AM** in the presence of the bidders’ representative who choose to attend at the same address. This advertisement along with instructions is available on <https://agpr.gov.pk/> and www.ppra.org.pk.

Branch officer (Admin-II) AGPR
G-8/4, Islamabad Tel: 051-9260362,
Email: admin2@agpr.gov.pk

AGPR ISLAMABAD

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

(Note: These Instructions to Bidders along with Bidding Data will not be part of the Contract and will cease to have effect once the contract is signed.)

A. GENERAL

IB.1 Scope of Bid

- 1.1 The AGPR wishes to receive bids for the Design, Supply, Installation, Testing & Commissioning of net-metering based solar PV system as described in these Bidding Documents, and summarized in the Bidding Data hereinafter referred to as the “Works”.
- 1.2 The Successful Bidder will be expected to complete the Works within the time of Three months, as specified in Appendix-A to the Bid.

IB.2 Source of Funds

- 2.1 The Employer has available to it sufficient resources / funds to completely finance the supply, construction and completion of the Works.

IB.3 Eligible Bidders

- 3.1 This Invitation for Bids is open to all bidders registered with Private Power and Infrastructure Board (the “PPIB”) under AEDB (Certification) Regulations, 2021 in the relevant category.

IB.4 One Bid per Bidder

- 4.1 Each bidder shall submit only one bid either by himself, or as a partner in a Joint Venture. A bidder who submits or participates in more than one bid (other than alternatives pursuant to Clause IB.16) will be disqualified.

IB.5 Cost of Bidding

- 5.1 The bidders shall bear all costs associated with the preparation and submission of their respective bids and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

IB.6 Site Visit

6.1 The bidders may visit and examine the Site of Works and its surroundings and obtain for themselves on their own responsibility all information that may be necessary for preparing the bid and entering into a contract for the Works. All cost in this respect shall be at the bidder's own expense.

6.2 The bidders and any of their personnel or agents will be granted permission by the AGPR to enter upon its premises and lands for the purpose of such inspection, but only upon the express condition that the bidders, their personnel and agents, will release and indemnify the Employer, his personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of such inspection.

B. BIDDING DOCUMENTS

IB.7 Contents of Bidding Documents

7.1 The Bidding Documents, in addition to invitation for bids, are those stated below and should be read in conjunction with any Addenda issued in accordance with Clause IB.9.

1. Instructions to Bidders;
2. Bidding Data;
3. Letters of Technical Bid & Price Bid;
4. Appendices to Bid;
5. Conditions of Contract;
6. Contract Data;
7. Form of Bid Security;
8. Form of Performance Security;
9. Form of Advance Payment Guarantee;
10. Form of Contract Agreement;
11. Specifications & Employer Design.

7.2 The bidders are expected to examine carefully the contents of all the above Bidding Documents. Failure to comply with the requirements of bid submission will be at the Bidder's own risk. Pursuant to Clause IB.26, bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

IB.8 Clarification of Bidding Documents

8.1 Any prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the AGPR in writing at the AGPR's address indicated in the Invitation for Bids. **The AGPR will respond to any request for clarification which he receives at least five (5) days prior to the deadline for submission of bids.**

IB.9 Amendment of Bidding Documents

- 9.1 At any time prior to the deadline for submission of bids, the AGPR may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.
- 9.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 7.1 hereof and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the AGPR.
- 9.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the AGPR may extend the deadline for submission of bids in accordance with Clause IB.20

C. PREPARATION OF BIDS

IB.10 Language of Bid

- 10.1 The bid and all correspondence and documents related to the bid exchanged by a bidder and the AGPR shall be in the bid language stipulated in the Bidding Data and particular Conditions of Contract. Supporting documents and printed literature furnished by the bidders may be in any other language provided the same are accompanied by an accurate translation of the relevant parts in the bid language, in which case, for purposes of evaluation of the bid, the translation in bid language shall prevail.

IB.11 Documents Comprising the Bid

- 11.1 **The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Bid and the other Price Bid, containing the documents listed in Bidding Data under the heading of 11.1 A & B respectively. Both envelopes to be enclosed together in an outer single envelope called the Bid. Each bidder shall furnish all the documents as specified in Bidding Data at 11.1 A & B.**
- 11.2 Bids submitted by a Joint Venture (JV) shall include a copy of the JV Agreement entered into by all partners. Alternatively, a letter of intent to execute a JV Agreement in the event of a successful bid shall be signed by all partners and submitted with the bid, together with a copy of the proposed agreement. The role to be played by each partner to be specified therein. Bids submitted by a JV of two (2) or more firms shall comply with the following requirements:
- (a) In case of successful bid, the form of JV Agreement shall be signed and be registered as per law so as to be legally binding on all partners **within four (4) days of the receipt of Letter of Acceptance** failing which the contract and the Letter of Acceptance shall stand void and redundant.

- (b) **One of the JV partners shall be nominated as being in charge who must be registered with PPIB under AEDB (Certification) Regulations 2021** and this Authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the JV partners. In case of a company submitting chain of Authority including board resolution to this effect or any authorization required under the law shall be mandatory.
- (c) The partners-in-charge shall always be duly authorized to deal with the Employer regarding all matters related with and/or incidental to the execution of Works as per the terms and conditions of JV Agreement and in this regard to incur any and all liabilities, receive instructions, give binding undertakings and receive payments on behalf of the JV.
- (d) All partners of the JV shall at all times and under all circumstances be liable jointly and severally for the execution of the Contract in accordance with the Contract terms and a statement to this effect shall be included in the authorization mentioned under Sub-Para (b) above as well as in the Form of Bid and in the Form of JV Agreement (in case of a successful bid): and
- (e) A copy of JV Agreement shall be submitted before signing of the Contract, stating the conditions under which JV will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the Contract and can give valid receipts on behalf of the JV, and any other information necessary to permit a full appraisal of its functioning. The JV agreement shall be deemed part of the Contract. No amendments/modifications whatsoever in the JV agreement shall be agreed to between the JV partners without prior written consent of the Employer.

11.3 The Bidder shall furnish, as part of the Technical Bid, a Technical Proposal including a statement of work methods, equipment, personnel, schedule and any other information as stipulated in the Bidding Forms, in sufficient detail to demonstrate the adequacy of Bidders' proposal to meet the Works requirements and the completion time referred to in sub-clause 1.2 hereof.

IB.12 Bid Prices

12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause 1.1 hereof, based on lump sum price of the Works. **The criteria for evaluation of bids are provided in the Bidding Data.**

12.2 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause shall be included in the rates and prices and the total Bid Price submitted by a bidder. After the date of bid submission deadline, any additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted.

IB.13 Currencies of Bid and Payment

13.1 The price of the Works shall be quoted by the bidders entirely **in Pak rupees**.

IB.14 Bid Validity

14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the Date of Bid Opening specified in Clause IB.23.

14.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period which shall in no case be more than the original bid validity period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his Bid Security for the period of the extension, and in compliance with Clause IB.15 in all respects.

IB.15 Bid Security

15.1 Each bidder shall furnish, as part of his bid, a Bid Security in the amount stipulated in the Bidding Data in Pak Rupees.

15.2 The Bid Security shall be, at the option of the bidder, in the form of Demand Draft, Call Deposit Receipt, Pay Order or a Bank Guarantee issued by a Scheduled Bank in Pakistan in favor of and acceptable to the Employer valid for a period thirty (30) days beyond the Bid Validity date.

15.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.

15.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but **not later than fifteen (15) days** after the expiration of the period of Bid Validity.

15.5 The Bid Security of the Successful Bidder will be returned when the bidder has furnished the required Performance Security and signed the Contract.

15.6 The Bid Security may be forfeited:

- (a) If the bidder withdraws his bid except as provided in Sub-Clause 22.1;
- (b) If the bidder does not accept the correction of his Bid Price pursuant to Sub-Clause 27.2 hereof; or
- (c) In case of Successful Bidder, if he fails within the specified time limit to:
 - (i) Furnish the required Performance Security; or (ii) Sign the Contract.
 - (iii) Furnish the required JV agreement within four (4) Days of the receipt of Letter of Acceptance.

IB.16 Alternate Proposal by Bidder

- 16.1 Should any bidder consider that he can offer any advantages to the Employer by a modification to the specifications or other conditions, he may, in addition to his bid to be submitted in strict compliance with the Bidding Documents, submit any Alternate Proposal(s) containing (a) relevant design specifications/calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details / conditions, provided always that the total sum entered on the Form of Bid shall be that which represents complete compliance with the Bidding Documents. The technical details and financial implications involved are to be submitted in two separate sealed envelopes as to be followed in main bid proposals.
- 16.2 Alternate Proposal(s), if any, of the lowest evaluated responsive bidder in sole discretion of the Employer may only be considered by the Employer as the basis for the award of Contract to such bidder.

IB.17 Pre-Bid Meeting

- 17.1 The Employer may, on his own motion/discretion or at the request of any prospective bidder(s), hold a pre-bid meeting to clarify issues and to answer any questions on matters related to the Bidding Documents. The date, time and venue of pre-bid meeting is as stipulated in the Bidding Data. All prospective bidders or their authorized representatives shall be invited to attend such a pre-bid meeting.
- 17.2 The bidders are requested to submit questions, if any, in writing so as to reach the Employer not later than three (3) days before the proposed pre-bid meeting.
- 17.3 Minutes of the pre-bid meeting, including the text of the questions raised and the replies given, will be transmitted without delay to all purchasers of the Bidding Documents. Any modification of the Bidding Documents listed in Sub-Clause 7.1 hereof which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause IB.9 and not through the minutes of the pre-bid meeting.
- 17.4 Absence at the pre-bid meeting will not be a cause for disqualification of a bidder.

IB.18 Format and Signing of Bid

- 18.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.
- 18.2 All appendices to Bid are to be properly completed and signed.
- 18.3 **No alteration is to be made in the Form of Bid nor in the Appendices thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the bid may be rejected.**

- 18.4 Each bidder shall prepare by filling out the forms completely and without alterations one (1) **original and one (1) copy of the documents** comprising the bid and clearly mark them “ORIGINAL” and „COPY” as appropriate. In the event of discrepancy between them, the original shall prevail.
- 18.5 The original and the copy of the bid shall be typed or written in indelible ink (in the case of copies, Photostats are also acceptable) and shall be signed by a person or persons duly authorized to sign on behalf of the bidder. This authorization shall consist of a written confirmation as specified in the Bidding Data 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, except for un-amended printed literature, shall be signed or initiated by the person signing the bid.
- 18.6 The bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the Employer, or as are necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.
- 18.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the Contract is to be sent.
- 18.8 Bidders should retain a copy of the Bidding Documents as their file copy.

D. SUBMISSION OF BIDS

IB.19 Sealing and Marking of Bids

- 19.1 Each bidder shall submit his bid as under:
- (a) ORIGINAL and the copy of the Bid shall be separately sealed and put in separate envelopes and marked as such.
 - (b) The envelopes containing the ORIGINAL and copy will be put in one sealed envelope and addressed / identified as given in Sub- Clause 19.2 hereof.
 - (c) **The technical bid should comprise of documents listed in 11.1 (A) of Bidding Data & the Price Bid should comprise of documents listed in 11.1 (B) of Bidding Data which shall be placed in separate envelopes in accordance with 11.1.**
- 19.2 The inner and outer envelopes shall:
- (a) Be addressed to the Employer at the address provided in the Bidding Data;
 - (b) Bear the name and identification number of the tender as defined in the Bidding Data; and
 - (c) Provide a warning not to open before the time and date for bid opening, as specified in the Bidding Data.

- 19.3 In addition to the identification required in Sub- Clause 19.2 hereof, the inner envelope shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared “late” pursuant to Clause IB.21.
- 19.4 If the outer envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

IB.20 Deadline for Submission of Bids

- 20.1 (a) Bids must be received by the Employer at the address specified no later than the time and date stipulated in the Bidding Data or such extended deadline as the Employer has duly notified in accordance with Clause IB.9.
- (b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of bids. No claims will be entertained for refund of such expenses.
- (c) Where delivery of a bid is by mail and the bidder wishes to receive an acknowledgment of receipt of such bid, he shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed bid package.
- (d) Upon request, acknowledgment of receipt of bids will be provided to those making delivery in person or by messenger.
- 20.2 The Employer may, at his discretion, extend the deadline for submission of bids by issuing an amendment in accordance with Clause IB.9, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

IB.21 Late Bids

- 21.1 (a) **Any bid received by the Employer after the deadline for submission of bids prescribed in Clause IB.20 will be returned unopened to such bidder.**
- (b) Delays in the mail, delays of person in transit, or delivery of a bid to the wrong office shall not be accepted as an excuse for failure to deliver a bid at the proper place and time. It shall be the bidder’s responsibility to determine the manner in which timely delivery of his bid will be accomplished either in person, by messenger or by mail.

IB.22 Modification, Substitution and Withdrawal of Bids

- 22.1 Any bidder may modify, substitute or withdraw his bid after bid submission provided that the modification, substitution or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids.
- 22.2 The modification, substitution, or notice for withdrawal of any bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.19 with the outer and inner envelopes additionally marked “MODIFICATION”, “SUBSTITUTION” or “WITHDRAWAL” as appropriate.
- 22.3 No bid may be modified by a bidder after the deadline for submission of bids except in accordance with Sub-Clauses 22.1 and 27.2.
- 22.4 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security in pursuance to Clause IB.15.

E. BID OPENING AND EVALUATION FOR SINGLE STAGE TWO ENVELOPE BIDDING PROCEDURE

IB.23 Bid Opening

- 23.1 The Employer will open the Technical Bids in public at the address, date and time specified in the Bidding Data in the presence of Bidders’ designated representatives and anyone who choose to attend. The Price Bid will remain unopened and will be held in custody of the Employer until the specified time of their opening.
- 23.2 First, envelopes marked “WITHDRAWALS” shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawals shall be permitted unless the corresponding withdrawal Notice contains a valid authorization to request the withdrawal and is read out at bid opening.
- 23.3 Second, outer envelopes marked “SUBSTITUTION” shall be opened. The inner envelopes containing the substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bid will remain unopened in accordance with IB 23.1. No envelope shall be substituted unless the corresponding.
- 23.4 Next, outer envelopes marked “MODIFICATION” shall be opened. No Technical Bid and /or Price Bid shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, readout, and recorded in accordance with IB 23.1. The Bidders’ representatives who are present shall be requested to sign the record. The omission of a Bidders signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

IB.24 Process to be Confidential

24.1 Information relating to the examination, clarification, evaluation and comparison of bid and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process before the announcement of bid evaluation report which shall be done at least seven (07) days prior to issue of Letter of Acceptance. The announcement to all Bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated. Any effort by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of such bidder's bid. However, any bidder feeling aggrieved may lodge a written complaint concerning his grievances within seven (07) days of announcement of technical evaluation report and five (05) days after issuance of final evaluation report; however mere fact of lodging a complaint shall not warrant suspension of the procurement process.

IB.25 Clarification of Bids

25.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at his discretion, ask any bidder for clarification of his bid. The request for clarification and the response shall be in writing but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause IB.28.

25.2 If a bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its bid may be rejected.

IB.26 Examination of Bids and Determination of Responsiveness

26.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid is substantially responsive to the requirements of the Bidding Documents.

26.2 A substantially responsive bid is one which (i) meets the eligibility and qualification criteria under the Bidding Documents; (ii) has been properly signed; (iii) is accompanied by the required Bid Security; and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer's rights or the bidder's obligations under the Contract; or (iii) adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids. Only substantially responsive bids shall be considered for further evaluation.

26.3 If a bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming

deviation or reservation. The Employer may, however, seek confirmation / clarification in writing which shall be responded in writing.

IB.27 Correction of Errors

27.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors and where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.

27.2 The amount stated in the Form of Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected Bid Price, his Bid will be rejected, and the Bid Security shall be forfeited in accordance with Sub- Clause 15.6(b) hereof.

IB.28 Evaluation and Comparison of Bids

28.1 The Employer will evaluate and compare only those Bids which are substantially responsive in accordance with Clause IB.26.

28.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price for errors pursuant to Clause IB.27.

28.3 The estimated effect of the price adjustment provisions of the Conditions of Contract due to Variation, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.

F. AWARD OF CONTRACT

IB.29 Award

29.1 Subject to Clauses IB.30 and IB.34, the Employer will award the Contract to the bidder whose bid has been determined by the Employer to be substantially responsive to the Bidding Documents and who has offered the **lowest evaluated** Bid Price, provided that such bidder has been determined to be eligible in accordance with the provisions of Clause IB.3 and qualify pursuant to criteria provided in the Bidding Documents.

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

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

IB.30 The Employer's Right to Accept any Bid and to Reject any or all Bids

30.1 Notwithstanding anything contained herein, the Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidders or any obligation except that the grounds for rejection of all bids shall upon request be communicated to any bidder who submitted a bid, without justification of grounds. Rejection of all bids shall be notified to all bidders promptly.

IB.31 Notification of Award

31.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Employer will pay the Contractor in consideration of the execution and completion of the Works by the Contractor as prescribed by the Contract Agreement (hereinafter and in the Conditions of Contract called the "Contract Price").

31.2 No Negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted.

31.3 The notification of award and its acceptance by the bidder will constitute the formation of the contract, binding the Employer and the bidder till signing of the formal Contract.

31.3 Upon furnishing by the successful bidder of a Performance Security, the Employer will promptly notify the other bidders that their Bids have been unsuccessful and return their bid securities.

IB.32 Performance Security

32.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Bidding Data and the Conditions of Contract within a period of seven (7) working days after the receipt of Letter of Acceptance.

32.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.32.1 or Clauses IB.33 or IB.35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

IB.33 Signing of Contract Agreement

33.1 Simultaneously with the furnishing of acceptable Performance Security under the Conditions of Contract, the formal Contract Agreement between the Employer and the Successful Bidder (s) shall be executed.

IB.34 General Performance of the Bidders

The Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts/works. The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, inter alia, reject his bid and/or take such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder.

IB.35 Integrity Pact

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

IB.36 Instructions not Part of Contract

Bids shall be prepared and submitted in accordance with these Instructions which are provided to assist bidders in preparing their bids, and do not constitute part of the Bid or the Contract Documents.

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BIDDING DATA

BIDDING DATA

The information in this section is complementary to, amends or supplements the provisions in the Instructions to Bidders. Whenever there is conflict, the provisions herein shall take precedence over those in the Instructions to Bidders.

Reference to instruction to Bidder	Bidding Data																														
IB-I 1.1	Name of the Project & Summary of the Works “Design, Supply, Installation, Testing & Commissioning of 288 KW net-metering based Solar PV System at the building of Accountant General Pakistan Revenues (AGPR). The Works shall be performed/executed as per the Specifications provided in the Bidding Documents and approved Contractor Design as per the Conditions of Contract”.																														
1.1	Name and Address of Employer Accountant General Pakistan Revenues (AGPR) G-8/4, Islamabad																														
IB-10 10.1	<u>Bid Language:</u> English																														
IB-11 11.1	<p><u>11.1 (A)</u> The Bidder shall submit with its Technical Bid the following documents:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">(a) Letter of Technical Bid</td> <td></td> </tr> <tr> <td>(b) Bid Security (IB.15)</td> <td></td> </tr> <tr> <td>(c) Written confirmation authorizing the signatory of the Bid to commit the Bidder (IB.18.5)</td> <td></td> </tr> <tr> <td>(d) Proposed Construction Schedule</td> <td style="text-align: right;">(Appendix-A)</td> </tr> <tr> <td>(e) List of Sub-Contractors (as required)</td> <td style="text-align: right;">(Appendix-B)</td> </tr> <tr> <td>(f) Past Performance and Financial Strength</td> <td style="text-align: right;">(Appendix-C)</td> </tr> <tr> <td>(g) Joint Venture Agreement (if applicable)</td> <td style="text-align: right;">(Appendix-D)</td> </tr> <tr> <td>(h) Integrity Pact</td> <td style="text-align: right;">(Appendix-E)</td> </tr> <tr> <td>(i) Proof of purchase of RFP</td> <td style="text-align: right;">(Appendix-F)</td> </tr> <tr> <td>(j) Copy of PPIB Certificate</td> <td style="text-align: right;">(Appendix-G)</td> </tr> <tr> <td>(k) Declaration of Beneficial Ownership</td> <td style="text-align: right;">(Appendix-H)</td> </tr> <tr> <td>(l) Affidavit of blacklisting</td> <td style="text-align: right;">(Appendix-I)</td> </tr> <tr> <td>(m) Specific System Data Checklist</td> <td style="text-align: right;">(Appendix-J)</td> </tr> </table> <p><u>11.1 (B)</u> The Bidder shall submit with its Price Bid the following documents:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">(a) Letter of Price Bid</td> <td></td> </tr> <tr> <td>(b) Bill of Quantities (BOQ)</td> <td style="text-align: right;">(Appendix-K)</td> </tr> </table>	(a) Letter of Technical Bid		(b) Bid Security (IB.15)		(c) Written confirmation authorizing the signatory of the Bid to commit the Bidder (IB.18.5)		(d) Proposed Construction Schedule	(Appendix-A)	(e) List of Sub-Contractors (as required)	(Appendix-B)	(f) Past Performance and Financial Strength	(Appendix-C)	(g) Joint Venture Agreement (if applicable)	(Appendix-D)	(h) Integrity Pact	(Appendix-E)	(i) Proof of purchase of RFP	(Appendix-F)	(j) Copy of PPIB Certificate	(Appendix-G)	(k) Declaration of Beneficial Ownership	(Appendix-H)	(l) Affidavit of blacklisting	(Appendix-I)	(m) Specific System Data Checklist	(Appendix-J)	(a) Letter of Price Bid		(b) Bill of Quantities (BOQ)	(Appendix-K)
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	<u>Bid Evaluation Criteria shall be as follows:</u>																														

1. MANDATORY ELIGIBILITY

Only the Firms/Companies/JV fulfilling the following basic requirements shall be considered for further evaluation (relevant documents to be attached):

(a) Local firms/ companies may participate in this process having valid registrations with the Securities and Exchange Commission of Pakistan (SECP) or registrar of firms, Income Tax Department / NTN / Sales Tax Number, Punjab Revenue Authority (PRA)/ relevant federal / provincial revenue authority and Pakistan Engineering Council (PEC) Registration in Category C-1 and above with relevant codes e.g. (EE11) and registered with e- Pak Acquisition Disposal System (EPADS) for E-Procurement. If an international firm is desirous of getting prequalified, then proof of their affiliation/registration from their respective country's legal and professional body shall have to be provided. However, the international firm shall submit JV / Consortium agreement with local partner(s) having a PEC license of C3 category (a copy of the certificates must be attached). The JV Agreement must be provided on a Stamp Paper.

(b) The interested firms/ companies must have completed **at least two (02)** solar projects and each equal to or more than **500KW solar PV capacity** during the last three (03) years in Pakistan or abroad. (Project Completion Certificate issued by Client must be attached along with Client contact numbers)

(c) The Applicant and members of a JV/consortium shall provide a Non-Judicial Affidavit declaring no blacklisting and no litigation from any government agency or an international financial institution.

(d) Audit Report (s) duly certified by a Chartered Accountant Firm for the last three (03) years. Average turnover of Rs. **1000 Million** or above for the last three years (2020-2021, 2021-2022, 2022-23)

(JV / Firm turnover collectively / jointly shall be calculated)

All the Applicants have to fulfil the requirements mentioned in this sub-Clauses (a to d). If any bidder/company not fulfill any of the above requirements mention in sub clauses (a to d) shall be consider as disqualified

2. GENERAL EXPERIENCE

Credit Marks for experience shall be awarded on the basis of the following qualifications:

Sr. No.	Category	Weightage /Marks
1.	General Experience	40
2.	Personnel Capabilities	20
3.	Equipment and Plant Capabilities	05
4.	Financial Soundness	30
5.	Logistics and Project Management Capacities	05
	Total:	100

Note: Qualification status shall be decided on the basis of Pass/Fail basis. The applicant must secure at least **65%** overall score and must secure **at least 50 %** in each individual aforementioned category. All bids/ proposals should be properly tagged and bound.

I. PERSONNEL CAPABILITIES

Credit Marks shall be awarded under this category using the following criteria:

Sr. No.	Salient Feature	Maximum Marks
1.	General Experience (Total Marks 40) Note: Applicants must score at least 50 % in this Category.	
a)	Projects of similar nature completed over the last five (05) years (Work Order and Completion Certificate must be provided by the Client) Marks distribution 05 projects (maximum), <i>each equal to or more than 500 kW</i> solar PV capacity within Pakistan or abroad. Note: A project having a capacity of less than 500 kW will be awarded zero marks.	30
b)	Projects of similar nature in hand (Work Order/LOA / Contract Agreement evidence of work in hand must be provided) Marks distribution 02 projects <i>equal to or more than 300 kW</i> solar PV capacity within Pakistan or abroad. (5 marks for each project) Note: A project having a capacity of less than 300 kW will be awarded zero marks.	10
	Sub-Total	40
Sr. No.	Salient Feature	Maximum Marks
2.	Personnel Capabilities (Total Marks 20) (<i>Attach copies of CVs along with Non-Judicial affidavit stating the availability of Engineers for the project</i>) Note: Applicants must score at least 50 % in this Category.	
i)	Qualified Graduate Engineers	
(a)	Number of Engineers Marks distribution <ul style="list-style-type: none"> • 5 marks will be given if the total No. of Engineers is ten or above. • For less than ten Engineers, marks will be given as per the following formula: = (A/10) × 5 A = No. of Engineers BSc Engineer (PEC Registration with minimum One (01) Year Experience) 	05

(b)	<p>Experience of Engineers in a number of years</p> <p>Marks distribution</p> <ul style="list-style-type: none"> • 5 marks will be given if the Applicant has at least five (5) Engineering graduates having at least five (05) years of relevant experience. • For less than 5 No. of Engineers having at least five (05) years of relevant experience, marks will be given as per the following formulas: = (A/5) × 5 <p>A = No. of Engineers having at least five (05) years of relevant experience.</p> <p>Note: Salary Slips of Engineers for the last three (03) months are to be provided.</p>	05
ii)	Number of Diploma Engineers/ Technicians in the employment of the Firm	
(a)	<p>Number of diploma engineers/technicians</p> <p>Marks distribution</p> <ul style="list-style-type: none"> • 5 marks will be given if the total number of Diploma of Associate Engineers (DAE)/ B Tech are ten or above. • For less than ten Diploma of Associate Engineers, marks will be given as per the following formula: = (A/10) × 5 <p>A = No. of DAEs/B-Tech</p> <p>Note: Salary Slips of DAE's for the last three (03) months are to be provided.</p>	05
(b)	<p>Experience of diploma engineers/ technicians in number of years.</p> <p>Marks distribution</p> <ul style="list-style-type: none"> • 5 marks will be given if the individual experience of at least five (05) No. of DAEs/ B Tech is equal to 4 years or above relevant experience. • For less than ten No. of DAEs/ B Tech having individual experience of four (4) years, marks will be given as per the following formula: = (A/10) × 5 <p>A = No. of DAEs/ B Tech having individual experience of four (04) years or above relevant experience.</p>	05
	Sub-Total	20

II. EQUIPMENT AND PLANT CAPABILITIES

Credit Marks shall be granted on the basis of the following criteria for various kinds of equipment relevant for the Project:

Note: Purchase Orders or Invoices are to be enclosed as evidence.

Sr. No.	Salient Feature	Maximum Marks
3.	Equipment Capability (Total Marks 05) Note: Applicants must score at least 50 % in this Category.	
a)	PV Analyzer	01
b)	GPS Meter	01
c)	Megger / Earth Resistance Tester	01
d)	AC/DC Clamp Meter	01
e)	Irradiance Meter	01
	Sub-Total	05

III. FINANCIAL POSITION

Credit Marks shall be awarded on the basis of the following criteria:

Sr. No.	Salient Feature	Maximum Marks
4.	Financial Position (Total Marks 30) Note: Applicants must score at least 50 % in this Category.	
i)	Working Capital = Current Assets – Current Liabilities (Average of Certified Audit Reports of Last 3 years)	
	<p>Marks distribution</p> <ul style="list-style-type: none"> 15 marks will be given if the available average working capital for the last three years or available bank credit line limit is equal to 200 Million PKR or above <p>For a limit less than 200 Million PKR, the following weightage will be applied:</p> $15 \times (A/200)$ <ul style="list-style-type: none"> A= Average Working Capital for the last three years OR Available Bank Credit Line Limit 	15
ii)	Annual Turnover (Certified Audit Reports of Last 3 years)	
	<p>Marks distribution</p> <ul style="list-style-type: none"> 15 marks to be given if the available average annual turnover for the last three years is equal to 500 million PKR or above. For turnover less than 500 million PKR, the following weightage will be applied: $15 \times (A/500)$ <p>A= Average Annual Turnover in last three (03) years</p>	15
	Sub-Total	30

IV. LOGISTICS AND PROJECT MANAGEMENT CAPACITIES

Credit Marks shall be awarded on the basis of the following criteria:		
Sr. No.	Salient Feature	Maximum Marks
5.	Logistics and Project Management Capacities (Total Marks 05) Note: Applicants must score at least 50 % in this Category.	
a)	01 CV of Project Management Leader / Project Management (Master Degree in Engineering Electrical / Mechanical) with minimum experience of ten (10) years for implementing projects of similar nature (01 personnel) i. PEC Registration Certificate should be attached. ii. Qualification and Experience carry 50% Marks each	05
	Sub-Total	05
IB-14 14.1	<u>Bid Validity</u> Period of Bid Validity shall be ninety (90) days from the date of Bid Opening.	
IB-15 15.1	<u>Bid Security</u> Amount of Bid Security shall be Rs. 9,000/- per K.W.	
IB-17 17.1	<u>Pre-Bid Meeting</u> The Pre-Bid meeting will be held on [15 January 2025], at 11:00AM at AGPR Office , G 8/4, Islamabad	
IB-19 19.2 (a)	<u>Address for the purpose of Bid submission:</u> Admin-II Section , Office of the Accountant General Pakistan Revenues (AGPR), G-8/4, Islamabad	
IB-20 20.1	<u>Deadline for submission of Bids:</u> As specified in the invitation for Bids	
IB-32 32.1	<u>Performance Security:</u> 10% of the Contract Price. The Performance security shall be an irrevocable & unconditional bank guarantee from any Scheduled Bank of Pakistan acceptable to the AGPR strictly as per Form of Performance Security provided in the Bidding Documents.	

Following clauses are added in Instructions to Bidders:

IB.37 Sufficiency of Bid

Each Bidder shall be deemed to have satisfied fully, before submitting the Bid, as to all aspects of the Works, correctness and sufficiency of his Bid and price stated in the Price Bid which price shall, except in so far as it is otherwise expressly provided in the Contract Agreement, cover all his obligations under the Contract Agreement and all matters and things necessary for the proper completion of Works.

Objections, excuses or claims made by the bidder after submission of his Bid to the Employer shall not be entertained.

IB.38 Sub-Contractors

Any Sub-Contractor is subject to the acceptance of the Employer and the Sub-Contract shall be subject to the same Conditions of Contract as the main Contract. A list, as set forth in Appendix "B" showing the name and address and credentials of each proposed sub-Contractor, the type of work to be sub-let and the reason for sub-letting shall be submitted with the Bid. Overall responsibility of all Works, whether parts of it subcontracted or not, shall rest with the Bidder.

IB.39 Taxes & Duties

The Bidder shall obtain all information as to Pakistan Income Tax, Sales Tax, Salaries Tax, Professional Tax, Company Tax, Municipal Octroi, Levies and any other taxes imposed by the local bodies, export and import duties, import surcharge, iqra surcharge, etc. and necessary permits and confirm the requirements thereof at his own responsibility and **include all such cost** in his Bid price. The quoted rate shall also include the cost of accepting the general risks/liabilities and obligations set forth or implied in the Contract.

IB.40 Insurance

The Bidder shall estimate the amounts required to be provided for all the insurances under the Contract from National Insurance Company Limited (NICL), Pakistan in accordance with the laws

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applicable in Pakistan and the Bid Price shall be deemed to include all such amounts.

IB.41 Indexation

The Bidder shall prepare and submit the Bid Price of the Works taking into account the TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan (NBP) as of date which is five (05) days prior to bid submission deadline.

The eighty (80%) of the Bid Price will be adjusted one-time at the Commencement Date (as defined in the Conditions of Contract) after applying the foreign exchange indexation, as per the formula given in the Contract Data.

IB.42 Foreign Exchange Availability for LCs Opening

The foreign exchange required by the Successful Bidder for import of solar equipment/opening of the LCs will be provided by the State Bank of Pakistan.

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CONDITIONS OF CONTRACT

CONDITIONS OF CONTRACT

1. GENERAL PROVISIONS

1.1 Definitions

In the Contract as defined below, the words and expressions defined shall have the following meanings assigned to them, except where the context requires otherwise:

The Contract

1.1.1 “Contract” means the Contract Agreement and the other documents listed therein.

1.1.2 “Specifications” means the minimum specifications of the equipment being parts of the net-metering based solar PV System as set out in the Bidding Documents and any Variation to such document.

1.1.3(A) “Employer Design” means the design of the net-metering based solar PV System as set out in the Bidding Documents and any Variation to such design.

1.1.3(B) “Contractor Design” means the design of the net-metering based solar PV System, prepared and submitted by the Contractor to the Employer under this Contract, based on the specifications of the offered equipment which design shall be in conformity with the Employer Design.

Persons

1.1.4 “Employer” means the person named in the Contract Data and the legal successors in title to this person, but not (except with the consent of the Contractor) any assignee.

1.1.5 “Contractor” means the person named in the Contract Data whose Bid has been accepted by the Employer and the legal successors in title to such person, but not (except with the consent of the Employer) any assignee of such person.”

1.1.6 “Party” means either the Employer or the Contractor.

Dates, Times and Periods

1.1.7 “Commencement Date” means the date as mentioned in the Contract Data.

1.1.8 “Day” means a calendar day.

1.1.9 “Time for Completion” means the time for completion of the Works as stated in the Contract Data (or as extended under Sub-Clause 7.3), calculated from the Commencement Date.

Money and Payments

1.1.10 “Cost” means all expenditure properly incurred (or to be incurred) by the Contractor, whether on or off the Site, including overheads and similar charges but does not include any allowance for profit.

Other Definitions

1.1.11 “Contractor’s Equipment” means all machinery, apparatus and other things required for the execution of the Works but does not include Materials or System intended to form part of the Works.

1.1.12 “Country” means the Islamic Republic of Pakistan.

1.1.13 “Employer’s Risks” means those matters listed in Sub-Clause 6.1.

1.1.14 “Force Majeure” means an event or situation beyond the control of a Party that is not foreseeable, is unavoidable and its origin is not due to negligence or lack of care on the part of such Party. Such events subject to the conditions as stated in the preceding sentence may include, but not be limited to, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

1.1.15 „Materials” means things of all kinds (other than System) to be supplied and incorporated in the Works by the Contractor.

1.1.16 “System” means the machinery and apparatus intended to form or forming part of the Works.

1.1.17 “Site” means the place mentioned in the Contract Data where the Works are to be executed, and any other place(s) specified in the Contract as forming part of the Site.

1.1.18 “Variation” means a change which is instructed by the Employer under Sub-Clause 10.1.

1.1.19 „Works” means any or all the works including design, supply, installation, construction, testing and commissioning of the System to be performed by the Contractor including temporary works and any Variation thereof.

1.1.20 “Engineer” means a qualified engineer/engineering firm appointed by the Employer to act as independent engineer for the purpose of the Contract for review of the Contractor Design, equipment inspection and verification of installed System.

1.1.21" Letter of Acceptance" means the formal acceptance by the Employer of the Tender.

1.1.22 "Tender" means the Contractor's priced offer to the Employer for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance.

1.2 Interpretation

Words importing persons or parties shall include firms and organizations. Words importing singular or one gender shall include plural or the other gender where the context requires.

1.3 Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. If an ambiguity or discrepancy is found in the documents, the priority of the documents shall be in accordance with the order as listed in the General Provisions of the Conditions of Contract.

1.4 Law

The rights and obligations of the Parties under the Contract shall be governed by laws of the Islamic Republic of Pakistan.

1.5 Communications

All Communications related to the Contract shall be in English language.

1.6 Statutory Obligations

The Contractor shall comply with the laws of the Islamic Republic of Pakistan and shall give all notices and pay all fees and other charges in respect of the Works.

2. THE EMPLOYER

2.1 Provision of Site

The Employer shall provide the Site and right of access thereto at the times stated in the Contract Data.

2.2 Permits etc.

The Contractor shall be exclusively responsible to apply for and obtain net metering license from NEPRA if so applicable. The Employer shall, if requested by the Contractor, assist him in applying for permits, licenses or approvals which are required for the Works.

2.3 **Employer's Instructions**

The Contractor shall comply with all instructions given by the Employer, in respect of the Works including the suspension of all or part of the Works.

2.4 **Approvals**

No approval or consent or absence of comment by the Employer shall affect the Contractor's obligations required under the Contract.

3. **EMPLOYER'S REPRESENTATIVES**

The Employer shall appoint with precise scope of authority and notify in writing a duly authorized person to act for him and on his behalf for the purposes of this Contract. The details and precise scope of the authority of such authorised person shall be notified in writing to the Contractor immediately after the signing of the Contract.

4. **THE CONTRACTOR**

4.1 **General Obligations**

The Contractor shall carry out the Works as per the highest standards of workmanship in the solar industry and in accordance with the terms and conditions of the Contract. The Contractor shall provide all supervision, labour, materials, plant and Contractor's equipment which may be required for the execution of the Works and shall also arrange all permits and licenses at his own cost, required for installation, commissioning and operation of the System.

For avoidance of doubt, the Contractor shall arrange bi-directional meter for the System and bear all related costs.

4.2 **Contractor's Representative**

The Contractor shall appoint a representative at site on full time basis to supervise the execution of Works and to receive instructions on behalf of the Contractor but only after obtaining the consent of the Employer for such appointment which consent shall not be unreasonably withheld by the Employer. Such authorized representative may be substituted/replaced by the Contractor at any time during the Contract Period but only after obtaining the consent of the Employer as aforesaid.

4.3 **Subcontracting**

The Contractor shall not subcontract the whole of the Works. The Contractor may subcontract any part of the Works subject to restriction stipulated in the Contract Data.

4.4 **Performance Security**

The Contractor shall furnish to the **Employer within seven (07)** working days after receipt of Letter of Acceptance a Performance Security, in the form of irrevocable & unconditional Bank Guarantee from any Scheduled Bank of Pakistan acceptable to the Employer for the amount and validity specified in Contract Data.

5. **DESIGN BY CONTRACTOR**

5.1 **Submission and Approval of Contractor Design**

The Contractor shall promptly submit the Contractor Design to the Employer for approval. Within seven (7) days of receipt, the Employer shall notify any comments or, if the design submitted is not in accordance with the Contract, shall reject it stating the reasons. The Contractor shall not construct any element of the Works designed by him within seven (7) days after the design has been submitted to the Employer or which has been rejected. Design that has been rejected shall be promptly amended and resubmitted.

5.2 **Responsibility for Design**

Notwithstanding that the Contractor Design is submitted and approved by the Employer, the Contractor shall solely remain responsible for his rendered design under this Contract, which shall not only be in strict conformity with the Employer Design and Specifications but also be fit for the intended purposes defined in the Contract. In addition, the Contractor shall also be solely responsible for any infringement of any patent or copyright in respect of such design.

6. **EMPLOYER'S RISKS**

6.1 **The Employer's Risks**

The Employer's Risks are: -

- a) politically motivated riot, commotion or disorder by persons other than the Contractor's personnel and other employees including the personnel and employees of Sub-Contractors, directly affecting the Site and/or the Works;
- b) use or occupation by the Employer of any part of the Works, except as may be specified in the Contract;
- c) late handing over of Site;
- d) a suspension under Sub-Clause 2.3 unless it is attributable to the Contractor's failure; and

- e) physical obstructions or physical conditions other than climatic conditions, encountered on the Site during the performance of the Works, for which the Contractor immediately notified to the Employer and accepted by the Employer.

6.2 Loss or Damage due to Employer's Risks

In the event of any such loss or damage happening from any of the risks defined in Sub-Clause 6.1 or force majeure, or in combination with other risks, the Contractor shall, if and to the extent required by the Employer, rectify the loss or damage and the Employer shall determine an addition to the Contract Price in accordance with Clause 10 and shall notify the Contractor accordingly. In the case of a combination of risks causing loss or damage any such determination shall take into account the proportional responsibility of the Contractor and the Employer.

7. TIME FOR COMPLETION

7.1 Execution of the Works

The Contractor shall commence the Works on the Commencement Date and shall proceed expeditiously and without delay and shall complete the Works, subject to Sub-Clause 7.3 below, within the Time for Completion as stated in the Contract Data.

7.2 Programme

Within the time stated in the Contract Data, the Contractor shall submit to the Employer a detailed programme for the Works incorporating the dates, which programme shall be in-line with the Proposed Construction Schedule submitted along with the Bid.

7.3 Extension of Time

The Contractor shall, within such time as may be reasonable under the circumstances, notify the Employer of any event(s) falling within the scope of Sub-Clause 6.1 or 10.3 of these Conditions of Contract and request the Employer for a reasonable extension in the time for the completion of Works. Subject to the aforesaid, the Employer shall determine such reasonable extension in the time for the completion of Works as may be justified in the light of the details/particulars supplied by the Contractor in connection with the such determination by the Employer within such period as may be prescribed by the Employer for the same; and the Employer shall extend the Time for Completion as determined.

7.4 Late Completion

If the Contractor fails to complete the Works within the Time for Completion, the Contractor's only liability to the Employer for such failure shall be to pay the amount stated in the Contract Data for each day for which he fails to complete the Works.

8. TAKING-OVER

8.1 Notice of Completion by the Contractor

The Contractor shall notify in writing to the Employer when he considers that the Works are complete in all aspects.

8.2 Taking-Over Notice

Within ten **(10) days** of receipt of notice of completion from the Contractor, the Engineer shall determine the conformity of the installed System with the approved Contractor Design and notify the Contractor through Employer that the Works are complete in accordance with the Contract. The Employer shall take over the Works upon the issue of this notice and issue Taking Over Certificate to the Contractor.

Alternatively, the Contractor shall be notified that the Works are not ready for taking over, stating the reasons accordingly. The Contractor shall then promptly complete any outstanding work and, subject to Clause 9, clear the site.

8.3 Defect Liability Period

Defect Liability Period shall be as stated in the Contract Data.

9. REMEDYING DEFECTS

9.1 Remedying Defects

The Employer may at any time prior to the expiry of the period stated in the Contract Data, notify the Contractor of any defects. The Contractor shall remedy at no cost to the Employer any defects due to the Contractor Design, Materials, System or workmanship not in accordance with the Contract.

The Cost of remedying defects attributable to any other cause shall be valued as a Variation. Failure to remedy any such defects or complete outstanding work within a reasonable time shall entitle the Employer to carry out all necessary works at the Contractor's cost.

9.2 Uncovering and Testing

The Employer may give instruction as to the uncovering and/or testing of any work. Unless as a result of an uncovering and/or testing it is established that the Contractor Design, Materials, System or workmanship are in accordance with the Contract, the Contractor shall be paid for such uncovering and/or testing as a Variation in accordance with Sub-Clause 10.2.

9.3 The Contractor at his own responsibility shall arrange all hoisting and fixing equipment necessary for the satisfactory completion of work and shall make good any damage to the existing surface.

10. VARIATIONS AND CLAIMS

10.1 Right to Vary

The Employer may instruct Variations.

10.2 Valuation of Variations

Variations shall be valued at a lump sum price mutually agreed between the Parties.

10.3 Early Warning

The Contractor shall notify the Employer in writing as soon as he is aware of any circumstance which may delay or disrupt the Works, or which may give rise to a claim for additional payment.

To the extent of the Contractor's failure to notify, which results to the Employer being unable to keep all relevant records or not taking steps to minimize any delay, disruption, or Cost, or the value of any Variation, the Contractor's entitlement to extension of the Time for Completion or additional payment shall be reduced/rejected.

10.4. Valuation of Claims

If the Contractor incurs Cost as a result of any of the Employer's Risks, the Contractor shall be entitled to the amount of such Cost. If as a result of any Employer's Risk, it is necessary to change the Works, this shall be dealt with as a Variation subject to Contractor's notification for intention of claim to the Employer within fourteen (14) days of the occurrence of cause.

10.5 Variation and Claim Procedure

The Contractor shall submit to the Employer an itemized make-up of the value of Variations and claims within twenty-one (21) days of the instruction or of the event giving rise to the claim. The Employer shall check and if possible agree the value. In the absence of agreement on the claim, the Employer shall determine the value.

11. CONTRACT PRICE AND PAYMENT TERMS

11.1 Contract Price

The Contract price shall be as provided in the Contract Data.

11.2 **Payment Terms and Statements**

Subject to the terms and conditions of the Contract, the Contractor shall be entitled to be paid the Contract Price at such intervals as given in the Contract Data.

12. **DEFAULT**

12.1 **Default by Contractor**

If the Contractor abandons the Works, refuses or fails to comply with a valid instruction of the Employer or fails to proceed expeditiously and without delay, or is, despite a written complaint, in breach of the Contract, the Employer may give notice referring to this Sub-Clause and stating the default.

If the Contractor has not taken all practicable steps to remedy the default within seven (07) days after receipt of the Employer's notice, the Employer may by a second notice given within a further fourteen (14) days, terminate the Contract. The Contractor shall then immediately demobilize from the Site leaving behind any and all contractor's Equipment which the Employer instructs, in the second notice, to be used for the completion of the Works at the risk and cost of the Contractor.

12.2 **Default by Employer**

If the Employer fails to pay in accordance with the Contract, or is, despite a written complaint, in breach of the Contract, the Contractor may give notice referring to this Sub-Clause and stating the default. If the default is not remedied within fourteen (14) days after the Employer's receipt of this notice, the Contractor may suspend the execution of all or parts of the Works.

12.3 **Insolvency**

If a Party is declared insolvent under any applicable law, the other Party may by notice terminate the Contract which shall be effective fourteen (14) days after receipt of notice by the other party. The Contractor shall then immediately demobilize from the Site leaving behind, in the case of the contractor's insolvency, any contractor's Equipment which the Employer instructs in the notice is to be used for the completion of the Works.

12.4 **Payment upon Termination**

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and System reasonably delivered to the Site, adjusted by the following:

- a) any sums to which the Contractor is entitled under Sub-Clause 10.4,
- b) any sums to which the Employer is entitled,

- c) if the Employer has terminated under Sub-Clause 12.1 or 12.3, the Employer shall be entitled to a sum equivalent to twenty percent (20%) of the value of parts of the Works not executed at the date of the termination, and
- d) if the Contractor has terminated under Sub-Clause 12.2 or 12.3, the Contractor shall be entitled to the cost of his demobilization together with a sum equivalent to ten percent (10%) of the value of parts of the Works executed at the date of termination.

The net balance due shall be paid or repaid within twenty-eight (28) days of the notice of termination.

13. RISKS AND RESPONSIBILITIES

13.1 Contractor's Care of the Works

The Contractor shall take full responsibility for the care of the Works from the Commencement Date until the date of the Employer's issuance of Certificate of Completion under Sub-Clause 8.2. Responsibility shall then pass to the Employer. If any loss or damage happens to the Works during the above period, the Contractor shall rectify such loss or damage so that the Works conform with the Contract.

Unless the loss or damage happens as a result of any of the Employer's Risks, the Contractor shall indemnify the Employer, or his agents against all claims loss, damage and expense arising out of the Works.

13.2 Force Majeure

If Force Majeure occurs, the Contractor shall notify the Employer immediately. If necessary, the Contractor may suspend the execution of the Works and, to the extent agreed with the Employer demobilize the contractor's Equipment.

If the event continues for a period of eighty-four (84) days, either Party may then give notice of termination which shall take effect twenty-eight (28) days after the giving of the notice.

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the Materials and System reasonably delivered to the Site, adjusted by the following:

- a) any sums to which the Contractor is entitled under Sub-Clause 10.4,
- b) the cost of his demobilization, and
- c) less any sums to which the Employer is entitled.

The net balance due shall be paid or repaid within thirty-five (35) days of the notice of termination.

14. INSURANCE

At all times during the execution of the Works, the Contractor shall maintain property insurance on the System for the replacement cost thereof, except for items (a) to (e) of the Employer's Risks.

15. RESOLUTION OF DISPUTES

15.1 Employer's Decision

If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with the Works, the matter in dispute shall, in the first place, be referred in writing to the Employer. Such reference shall state that it is made pursuant to this Clause. No later than the twenty-eight (28) days after the day on which he received such reference, the Employer shall give notice of his decision to the Contractor.

Unless the Contract has already been repudiated or terminated, the Contractor shall, in every case, continue to proceed with the Works with all due diligence, and the Contractor shall give effect forthwith to every such decision of the Employer unless and until the same shall be revised, as hereinafter provided in an arbitral award.

15.2 Notice of Dissatisfaction

If the Contractor is dissatisfied with the decision of the Employer or if no decision is given within the time set out in Sub-Clause 15.1 here above, the Contractor may give notice of dissatisfaction referring to this Sub-Clause within fourteen (14) days of receipt of the decision or the expiry of the time for the decision. If no notice of dissatisfaction is given within the specified time, the decision shall be final and binding on the Contractor. If notice of dissatisfaction is given within the specified time, the decision shall be binding on the Contractor who shall give effect to it without delay unless and until the decision of the Employer is revised by an arbitrator.

15.3 Arbitration

A dispute which has been the subject of a notice of dissatisfaction shall be finally settled as per provisions of Arbitration Act 1940 (Act No. X of 1940) and Rules made thereunder and any statutory modifications thereto. Any hearing shall be held at the place specified in the Contract Data and in the language referred to in Sub-Clause 1.5.

16 INTEGRITY PACT

16.1 If the Contractor, or any of his Sub-Contractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed

Conditions of Contract

by the Contractor as Appendix-E to his Bid, then the Employer shall be entitled to:

- (a) recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by the Contractor or any of his Sub-Contractors, agents or servants;
- (b) terminate the Contract; and
- (c) recover from the Contractor any loss or damage to the Employer as a result of such termination or of any other corrupt business practices of the Contractor or any of his Sub-Contractors, agents or servants.

On termination of the Contract under Sub-Para (b) of this Sub-Clause, the Contractor shall immediately demobilize from the Site leaving behind Contractor's Equipment which the Employer instructs, in the termination notice, to be used for the completion of the Works at the risk and cost of the Contractor. Payment upon such termination shall be made under Sub-Clause 12.4, in accordance with Sub-Para (c) thereof, after having deducted the amounts due to the Employer under Sub-Para (a) and (c) of this Sub-Clause.

17. PRIORITY OF CONTRACT DOCUMENTS:

The priority list of contractual documents shall be as follows:

- (a) Contract Agreement;
- (b) Letter of Acceptance;
- (c) Specifications and Employer Design
- (d) Contract Data;
- (e) Conditions of Contract;
- (f) Letters Technical Bid and Price Bid; (g) The priced Bill of Quantities; and (h) The Appendices to Bid.

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CONTRACT DATA

CONTRACT DATA
Conditions of Contract

Sr. #	Description	Clause Conditions of Contract	Explanation
1.	Employer's name and address	1.1.4	Accountant General Pakistan Revenues (AGPR)
2.	contractor's name	1.1.5	[Name of the Successful Bidder]
3.	Commencement Date	1.1.7	Commencement Date shall be the date when all of the following conditions have been fulfilled: <ol style="list-style-type: none"> 1. The Contractor has submitted to the Employer the advance payment guarantee in accordance with the terms of Conditions of the Contract; 2. The Employer has paid the Contractor the advance payment; and 3. The Site is formally handed over to the Contractor by the Employer by written authorization.
4.	Site	1.1.17	AGPR Complex, G8/4, Islamabad
5.	Engineer's name and address	1.1.20	[National Engineering Services Pakistan (NESPAK)]
6.	Access to site	2.1	Within two (2) days of signing of Contract
7.	Subcontracting	4.3	The aggregate amount of the works subcontracted shall not exceed 40% of the Contract.
8.	Amount of Performance Security	4.4	Ten (10%) of Contract Price stated in the Letter of Acceptance.
9.	Validity of Performance Security	4.4	Validity of Performance Security shall be twenty-five (25) months from the issuance of Taking Over Certificate (TOC) and, if not en-cashed pursuant to the terms of the Contract, shall be returned within fourteen (14) days of its expiry.
10.	Time for Completion	7.1	Ninety (90) days from the Commencement Date.
11.	Time for furnishing Programme	7.2	Within seven (7) days from the date of receipt of Letter of Acceptance.

12.	Amount of Liquidated Damages	7.4	The rate of the Liquidated Damages (LD) shall be 0.33% of the Contract Price stated in the Letter of Acceptance for every day of delay in which whole or part of the work(s) remained unfurnished subject to a maximum of 10% of the Contract Price.
13	Defects Liability Period	8.3	One years calculated from the date of Taking Over Certificate issued by the Employer. Defect Liability Certificate shall be issued within 14 days after Defect Liability Period.

Contract Data

14.	Remedying Defect Period	9.1	Within fourteen (14) days after notice of defect.
15.	Contract Price	11.1	As stated in the Letter of Acceptance to be adjusted one-time at Commencement Date using the following formula: $\text{Contract Price} = (\text{CP}_{\text{LOA}} * 0.80) * \text{ER}(\text{Rev})/\text{ER}(\text{Ref}) + (\text{CP}_{\text{LOA}} * 0.20)$ Where: CP_{LOA} = Contract Price as stated in the Letter of Acceptance $\text{ER}(\text{Rev})$ = The revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan (NBP) on the Commencement Date $\text{ER}(\text{Ref})$ = The reference TT & OD selling Rate of Rs. [●]/US\$

16.	Payment Terms	15.3	<p>Payment by Employer to Contractor after completion of following milestone shall be as per following break up:</p> <table border="1"> <thead> <tr> <th>S. No</th> <th>Payment Milestones/ Deliverables</th> <th>Percentage (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Survey & Design Approval</td> <td>5</td> </tr> <tr> <td>2</td> <td>Site Preparation (Clearance of Roof, Civil work for PV Mounting Structure,)</td> <td>10</td> </tr> <tr> <td>3</td> <td>Supply and Installation of PV Mounting Structure</td> <td>10</td> </tr> <tr> <td>4</td> <td>Supply of solar modules at site and submission of approved sample test reports random 2% of the total quantity of PV modules</td> <td>15</td> </tr> <tr> <td>5</td> <td>Supply of, AC Cables, DC Cables, Earthing and Lightning Arrestors on Site</td> <td>15</td> </tr> <tr> <td>6</td> <td>Installation of Solar Modules and installation of Inverter along with Genset Controller, AC Cables, DC Cables, Earthing and Lightning Arrestors on Site</td> <td>20</td> </tr> <tr> <td>7</td> <td>Complete commissioning on Site and upon Installation of real time as well as Online Monitoring Access.</td> <td>15</td> </tr> <tr> <td>8</td> <td>Rectification of Punch List duly vetted by M&E consultant</td> <td>5</td> </tr> <tr> <td>9</td> <td>Upon installation of Bi-Directional Meter, Submission of Net Metering Application of site to DISCO as per NEPRA rules, Submission of Final Report after successful completion of the Project and upon Submission of Performance Security against O&M</td> <td>5</td> </tr> <tr> <td colspan="2">Total</td> <td>100</td> </tr> </tbody> </table> <p>Note:</p> <ul style="list-style-type: none"> • Payment (s) of all Deliverables shall be made following verification from NESPAK/Project Validation Consultant. • The Performance Security against O & M, submitted by the Contractor shall be 5 % of the Contract Price for One (01) Year which shall be released to the Contractor after successful completion and submission of report. 	S. No	Payment Milestones/ Deliverables	Percentage (%)	1	Survey & Design Approval	5	2	Site Preparation (Clearance of Roof, Civil work for PV Mounting Structure,)	10	3	Supply and Installation of PV Mounting Structure	10	4	Supply of solar modules at site and submission of approved sample test reports random 2% of the total quantity of PV modules	15	5	Supply of, AC Cables, DC Cables, Earthing and Lightning Arrestors on Site	15	6	Installation of Solar Modules and installation of Inverter along with Genset Controller, AC Cables, DC Cables, Earthing and Lightning Arrestors on Site	20	7	Complete commissioning on Site and upon Installation of real time as well as Online Monitoring Access.	15	8	Rectification of Punch List duly vetted by M&E consultant	5	9	Upon installation of Bi-Directional Meter, Submission of Net Metering Application of site to DISCO as per NEPRA rules, Submission of Final Report after successful completion of the Project and upon Submission of Performance Security against O&M	5	Total		100
			S. No	Payment Milestones/ Deliverables	Percentage (%)																															
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Total		100																																		
17.	Seat of Arbitration	15.3	Islamabad																																	

LETTER OF TECHNICAL BID

Date: -----

Bid Reference No: _____
(Name of Contract/Works)

To:

The Accountant General, Accountant General Pakistan Revenues, G 8/4, Islamabad

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with instructions to Bidders (IB) 9;
- (b) We offer to execute and complete in conformity with the Bidding Documents the Works (as defined in the Bidding Documents);
- (c) Our Bid consisting of the Technical Bid and the Bid Price shall be valid for a period of ninety (90) days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) As security for due performance of the undertakings and obligations of our bid, we hereby submit a Bid Security, in the amount specified in Bidding Data, which is valid (at least) thirty (30) days beyond validity of Bid itself;
- (e) We confirm that our Bid is not in deviation of any technical and commercial terms as provided in the Bidding Documents;
- (f) We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process; and
- (g) We agree to permit Employer or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors. This permission is extended for verification of any information provided in our Technical Bid which comprises all documents enclosed herewith in accordance with IB 11.1 of the Bidding Data.

Name-----

In the Capacity of-----

Signed-----

Duly authorized to sign the Bid for and on behalf of:-----

Date:----- Address:---

LETTER OF PRICE BID

Date: _____

Bid Reference No: _____

(Name of Contract/Works)

To:

The Accountant General, Accountant General Pakistan Revenues, G 8/4, Islamabad

We, the undersigned, declare that:

- a. We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with instructions to Bidders (IB) 9;
- b. The total price of our Bid, including any discounts offered, is PKR [●];
- c. Our Bid shall be valid for a period of ninety (90) days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- d. If our Bid is accepted, we commit to obtain and post a Performance Security in accordance with the Bidding Documents;
- e. We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed and we do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other bidder for the works;
- f. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive; and
- g. If awarded the contract, the person named below shall act as Contractors Representative.

Name -----

In the capacity of ----- Signed -

-
Duly authorized to sign the Bid for and on behalf of -----

-
Date ----- Address

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APPENDICES TO BID

PROPOSED CONSTRUCTION SCHEDULE

Please note that the Works shall be completed within the time period stated in the Contract Data. The Bidder shall provide as Appendix-A to Bid, the Construction Schedule in the bar chart (CPM, PERT or any other to be specified herein) showing the sequence of work items and the period of time during which he proposes to complete each work item in such a manner that his proposed programme for completion of whole of the Works and parts of the Works shall not exceed the time period specified in the Contract Data. Such period shall commence and counted from the Commencement date as specified in the Contract Data.

LIST OF SUBCONTRACTORS

[Name of Bidder] intend to subcontract the following parts of the Works to subcontractors. We hereby confirm that the subcontractors named hereunder are reliable and competent to perform that part of the Works for which each is listed.

Please find enclosed the documentation outlining experience of the subcontractors, the curriculum vitae and experience of their key personnel who will be assigned to the Contract, equipment to be supplied by them, size, location and type of contracts carried out in the past.

Part of Works (Give Details)	Subcontractor (With Complete Address)
1	2

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**PAST EXPERIENCE, PERSONNEL CAPABILITIES AND FINANCIAL
STRENGTH**

Please provide requisite documentary evidence to substantiate the past experience, personnel capabilities and financial strength of the Bidder for evaluation as per the Sub-Clause of Bidding Date IB-12 Qualification Criteria.

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**Form EXP-1:
Details of Contracts of Similar Nature and Complexity**

Name of Bidder or partner of a joint venture

Use a separate sheet for each contract

1.	Name of Contract
	Country
2.	Name of Employer
3.	Employer Address & Contact Details
4.	Nature of Works
5.	Contract Role (Tick One) (a) Sole Contractor (b) Sub- Contractor (c) Partner in a Joint Venture
6.	Capacity (kW) & Value (PKR) of the total contract.
7.	Date of Award
8.	Date of Completion
9.	Contract Duration (Years and Months)

Note: The Bidder shall attach documentary evidence (contract agreement & completion certificate) to substantiate the above facts/data.

Appendix-D to Bid

JOINT VENTURE AGREEMENT

[Please provide certified true copy of Joint Venture (JV) Agreement, if applicable.]

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INTEGRITY PACT

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

Contract No. _____ Dated _____

Contract Value: _____

Contract Title: _____

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

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

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

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

Notwithstanding any rights and remedies exercised by GoP in this regard, [name of Contractor] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Contractor] as aforesaid for the purpose of obtaining or

inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

Name of Employer:

Name of Contractor:

Signature:

Signature:

[Seal]

[Seal]

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PROOF OF PURCHASE OF RFP

[Please provide certified true copy of purchase of RFP from the Employer, if purchased, otherwise leave it blank]

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COPY OF PPIB CERTIFICATE

[Please provide certified true copy of valid PPIB Certificate issued under AEDB Certification Regulations, 2021]

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DECLARATION OF BENEFICIAL OWNERS

The “**Declaration of Beneficial Owners**” Information of Public Procurement Contract Awarded Regulations, 2022” require that all procuring agencies while engaging in public procurement contract worth **Rs. 50 Million** and above shall make a mandatory provision of beneficial ownership information of the company in the said contract as prescribed in following performa to these regulations. The procuring agencies while entering into such contracts shall publicize the beneficial ownership information of the company on PPRA’s website. The procuring agency shall forward all such contracts containing the beneficial ownership information to the Authority for placing it on PPRA’s website. Accordingly, if applicable, the following performa shall be submitted by the bidders along with the Technical Bid.

DECLARATION OF ULTIMATE BENEFICIAL OWNERS INFORMATION FOR PUBLIC PROCUREMENT CONTRACTS.

1. Name _____

2. Father’s Name / Spouse’s Name _____

3. CNIC / NICOP / Passport No. _____
4. Nationality
5. Residential Address
6. Email Address
7. Date on which shareholding control or interest acquired in the business

8. In case of indirect shareholding control or interest being exercised through intermediary companies, entries or other legal persons or legal arrangements in the chain of ownership or control following additional particulars to be provided:

1	2	3	4	5	6	7	8	9	10
Name	Legal form (company)/ limited liability partnership / association of persons / Single Member company / partnership firm / trust any other individual body corporate (to be specified)	Date of incorporation / registration	Name of registering authority	Business Address	Country	Email Address	Percentage of shareholding control or interest of BO in the legal person or legal arrangement	Percentage of shareholding control or interest of legal person or legal arrangement in the company	Identity of natural person who ultimately owns or controls the legal person or arrangement

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

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

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

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

AFFIDAVIT OF BLACKLISTING

[Please provide an affidavit that the bidder has not been blacklisted by any government / public department / donor agencies at the time of submission of bid.]

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Appendix-J

SPECIFIC SYSTEM DATA CHECKLIST

The specific System data checklist to be filled by the Bidders is given below for Bidders to confirm:

[Please insert detailed specific System data checklist]

BILL OF QUANTITIES

A. Preamble

1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Employer Design given in the Bidding Documents.
2. The rates and prices entered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract include all costs of contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore, all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date of deadline for submission of Bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.
3. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
4. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works.
5. General directions and description of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the priced Bill of Quantities.
6. Provisional sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Employer.

BILL OF QUANTITIES

Bidder / Company/ Contractor Name :

Item No.	Project Description	Total Cost of Solar Equipment PKR	Total Cost of Services (Excluding O & M) PKR	Total Cost of O&M (1 years) PKR	Total Cost of the Institute PKR
1	Private Power Infrastructure Board (PIIB) 288KW				
	Amount in Words:				

(Note: Total Price, in Pak Rupees, shall be provided in figures as well as in words, Prices should be included with all Govt. applicable taxes)

Financial bid price quoted by the bidder will be considered as with all applicable taxes otherwise considered as non-compliant.

NOTE: Lump Sum (Summary of Bid Prices) and Item wise (BOQ of the System / Schedule of Prices (BOQ)) rate must be submitted in the Financial Proposal separately. The Bid not accompanied with the item wise rates shall be rejected and declared non-responsive.

Bill of Quantities (BOQ)

BOQ Financial Proposal					
Design, Supply, Installation and One Year O&M of Roof Top Grid Tie Solar PV System Name of Public Institute : _____ Solar PV Capacity : _____ 288 KW _____					
Sr.	Description	Qty.(Nos.)	UOM	Brand & Model No	Unit Price (PKR) GST Total Price (Inclusive of GST)
1 PV Modules & Power Generation System					
1.1	Solar Modules (Min 550 W and Above)		kW		
1.2	On Grid Inverter (1:1- or above) -		kW		
1.3	Cable for interconnection (DC)		m		
1.4	Distribution Box for AC, DC Breakers, AC, DC Breaker Breakers, Change Over Switch for each Inverter		No.		
2 Fabricated Items					
2.1	Aluminum Mounting Structure (L2/L3) Rooftop		No.		
2.2	Civil Blocks for erection of structure				
2.3	Cable Tray, Ducting and allied Accessories		m		
3 Cable & Accessories					
3.1	AC Cables for (Inverter, Interconnections, meter termination, etc)		m		
3.2	Installation Material (cable Ducts etc)		m		
4 Earthing/ Grounding System / Protection					
4.1	Earthing System for AC/DC System as per Net metering Rules (Total 3 AC Bore, 3 DC Bores)		No.		
4.2	External AC & DC Surge Protection Devices (SPDs) for each Inverter		No.		
5 Remote Monitoring & Data Acquisition System					
5.1	Contractor Shall Provide the access of Remote Monitoring Mobile App and Server from the Inverter Manufacturer for real time monitoring, Data Logging with Two (2) Android 4K QLED TV 55" for each site and		No.		

5.2	GSM Device for Remote Monitoring & Data Acquisition System for each invertor		No.		
6	Services				
6.1	Project Design & Execution		Job		
6.2	Erecting of Mechanical Mounting Structure		Job		
6.3	Installation, testing and Commissioning of Solar System		Job		
6.4	Operations and Maintenance - O&M Services (01 Year)		Job		
6.5	Net-Metering Process (Including Equipment, Fee, Approvals, Bi-Directional Meters Documentation, Inspection)		Job		
Total Project Cost					

The bidders are required to submit the technical compliance sheet for each institute individually.

Note:

- **Bidders are required to visit the project site before offering.**
- **Interested Bidders must conduct a comprehensive site survey before submitting their proposals.**
- **Any additional items not covered above BOQ but necessary for the functioning of the system and required as per specification shall be incorporated by vender, the term of minor nature of work which are not mention in above BOQ shall be incorporated by vender on the same price**
- **All the parameters quoted shall be verifiable from Data Sheet or User Manual or any other Document provided from the Manufacturer otherwise, the Bid shall be considered non-responsive.**
- **All other data required as per the Technical Specification/ Employer Requirements shall be provided or reflected in the Data Sheets / Brochures of each item otherwise, the Bid shall be considered non- responsive.**
- **Certificates required for the items, specified in the Technical Specifications shall be provided along with the Data Sheets and Brochures otherwise, the Bid shall be considered non-responsive.**
- **Brochures / Data sheets / Certification of all products must be provided from the original Manufacturer.**

FORM OF BID SECURITY
(Bank Guarantee)

Security Executed on _____
(Date)

Name of Surety (Bank) with Address:
(Scheduled Bank in Pakistan)

Name of Principal (Bidder) with Address: _____

Security Amount in Rupees. _____ (Rs. _____)

Bid Reference No. _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal (Bidder) we, the Surety above named, are held and firmly bound unto

_____ (hereinafter called the 'Employer') in the sum stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Bidder has submitted the accompanying Bid dated _____ for Bid No. _____ for _____ (Particulars of Bid) to the said Employer; and

WHEREAS, the Employer has required as a condition for considering said Bid that the Bidder furnishes a Bid Security in the above said sum from a Scheduled Bank in Pakistan, to the Employer, conditioned as under:

- (1) that the Bid Security shall remain in force up to and including the date 30 days after the deadline for validity of bids as stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Surety is hereby waived;
- (2) that the Bid Security of unsuccessful Bidders will be returned by the Employer after expiry of its validity or upon signing of the Contract Agreement; and
- (3) that in the event of failure of the successful Bidder to execute the proposed Contract Agreement for such work and furnish the required Performance Security, the entire said sum be paid immediately to the said Employer pursuant to Clause 15.6 of the Instruction to Bidders for the successful Bidder's failure to perform.

NOW THEREFORE, if the successful Bidder shall, within the period specified therefor, on the prescribed form presented to him for signature enter into a Contract Agreement with the said Employer in accordance with his Bid as accepted and furnish within seven (07) working days of issuance of Letter of Acceptance, a Performance Security with

good and sufficient surety, as may be required, upon the form prescribed by the said Employer for the faithful performance and proper fulfilment of Form of Bid Security

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the said Contract Agreement or in the event of non-withdrawal of the said Bid within the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

PROVIDED THAT the Surety shall forthwith pay the Employer the said sum upon first written demand of the Employer (without cavil or argument) and without requiring the Employer to prove or to show grounds or reasons for such demand, notice of which shall be sent by the Employer by registered post duly addressed to the Surety at its address given above.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal (Bidder) has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Surety shall pay without objection the said sum upon demand from the Employer forthwith and without any pursuant to authority of its governing body.

SURETY (Bank)

WITNESS: _____ Signature
reference to the Principal (Bidder) or any other person.

IN WITNESS WHEREOF, the above bounden Surety has executed this Guarantee under its seal on the date indicated above, the name and seal of the Surety being hereto affixed and these presents duly signed by its undersigned representative _____

_____ 1. _____

Name

Title

Corporate Secretary (Seal)

Corporate Guarantor
(Seal)

2. _____

Name, Title & Address

Form of Bid Security

**FORM OF PERFORMANCE SECURITY
(Bank Guarantee)**

Guarantee No. _____

Executed on _____

Expiry date

[Letter by the Guarantor to the Employer]

Name of Guarantor (Bank) with address:

(Scheduled Bank in Pakistan)

Name of Principal (Contractor) with address:

Security Amount (express in words and figures) _____

Letter of Acceptance No. _____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly and irrevocably and unconditionally bound unto the _____ (hereinafter called the Employer) in the sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Employer's above said Letter of Acceptance for _____ (Name of Contract) for the _____

_____ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Employer, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract Agreement and of any and all modifications of said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 8.3, Defects Liability, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment

in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this

Form of Performance Security
Guarantee.

We, _____ (the Guarantor), waiving all objections and defences under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer's written declaration that the Principal has refused or failed to perform the obligations under the Contract Agreement which payment will be effected by the Guarantor to Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer shall be the sole and final judge for deciding whether the Principal (Contractor) has duly performed his obligations under the Contract Agreement or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Employer forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above-bounden Guarantor has executed this Guarantee under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

	_____ Guarantor (Bank)
Witness:	
1. _____	Signature _____
_____	Name
_____	Title
Corporate Secretary (Seal)	

2. _____	
_____	_____
Name, Title & Address	Corporate Guarantor (Seal)

**FORM OF ADVANCE PAYMENT
(Bank Guarantee)**

Guarantee No. _____ Date _____

WHEREAS _____ (hereinafter called the 'Employer') has entered into a Contract for _____

_____ (Particulars of Contract) with _____ (hereinafter called the "Contractor").

AND WHEREAS, the Employer has agreed to advance to the Contractor, at the Contractor's request, an amount of Rupees _____ (Rs _____) which amount shall be advanced to the Contractor as per provisions of the Contract.

AND WHEREAS, the Employer has asked the Contractor to furnish Guarantee to secure the advance for the performance of his obligations under the said Contract.

AND WHEREAS, _____ (Scheduled Bank in Pakistan) (hereinafter called the "Guarantor") at the request of the Contractor and in consideration of the Employer agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

NOW, THEREFORE, the Guarantor hereby guarantees that the Contractor shall use the advance for the purpose of above-mentioned Contract and if he fails and commits default in fulfilment of any of his obligations for which the advance payment is made, the Guarantor shall be liable to the Employer for payment not exceeding the aforementioned amount. Notice in writing of any default, of which the Employer shall be the sole and final judge, on the part of the Contractor, shall be given by the Employer to the Guarantor, and on such first written demand, payment shall be made by the Guarantor of all sums then due under this Guarantee without any reference to the Contractor and without any objection. This Guarantee shall remain in force until the Delivery of Machinery, Equipment and Material of the System at Site upon verification and confirmation of the Employer. The Guarantor's liability under this Guarantee shall not in any case exceed the sum of Rupees _____ (Rs _____). This Guarantee shall remain valid up to seven (07) days of the aforesaid confirmation letter by the Employer and shall be null and void after the aforesaid date.

GUARANTOR

Signature _____
Name / Title _____

WITNESS

1. _____

_____ Corporate Secretary (Seal)

2. _____

(Name Title & Address)

_____ Corporate Guarantor (Seal)

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the “ Contract Agreement”) made on the _____ day of _____(month) 20____ between _____ (hereafter called the “Employer”) of the one part and _____ (hereafter called the “Contractor”) of the other part.

WHEREAS the Employer is desirous that certain Works, viz _____ should be executed by the Contractor and has accepted a Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW this Agreement witnessed as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents after incorporating addenda, if any, except those parts relating to Instructions to Bidders shall be deemed to form and be read and construed as part of this Contract Agreement, viz:
 - (a) Letter of Acceptance;
 - (b) Specifications and Employer Design
 - (c) Contract Data;
 - (d) Conditions of Contract;
 - (e) Letters Technical Bid and Price Bid; (f) The priced Bill of Quantities; and (g) The Appendices to Bid.
3. In the event of any discrepancy or inconsistency within the Contract Documents, then the documents shall prevail in the order listed above.
4. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and in all respects with the provisions of this Contract Agreement.
5. The Employer hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of this Contract Agreement, the Contract Price or such other sum as may become payable under the provisions of this Contract Agreement at the times and in the manner prescribed therein.

IN WITNESS WHEREOF the parties hereto have caused this Contract Agreement to be executed on the day, month and year first before written in accordance with their respective laws.

Signature of the Contactor

(Seal)

Signature of Employer

(Seal)

In the presence of:

Witness:

(Name, Title and Address)

Witness:

(Name, Title and Address)

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Technical Specifications for Solarization

Note- The technical specifications of the solar equipment must fulfil the standard requirements as per the import policy S.R.O.604(I)/2019, Dated 28th May,2019. Verifiable Test Certifications for the required standards must be provided with the technical proposal. In case of discrepancy, the mentioned S.R.O shall prevail.

“All products should be compliant to relevant IEC standards/specifications, however, other equivalent, international standards may be used where IEC relevant standard is not available, with subject to prior approval of the Project Director”.

1. Solar Panels

Parameters	Min. Specifications required
Module Make	Tier 1 , Brand should be verifiable for the procurement year
PV Module Capacity	400 Watts or above (as per design)
PV Module Type	Poly-crystalline/Monocrystalline and above
Cell Quality	A Grade (verifiable)
Module Efficiency	19% or higher
Power Tolerance	Must be + 3% or more
Operating Cell Temperature	-40 ° C to +85 ° C
Temperature Coefficient	-0.40% / ° C or less
Bypass Diode	As per design
Bus Bar	4 or higher
Certification	IEC 61215, IEC 61730 , IEC 61439, IEC 60947-3 as amended to date ,PID free Modules
Frame	Must Withstand 5400 PA impulse Load
Junction Box	IP 67 or better
Cable	4 mm2 (IEC), 1000mm or per design
Connectors	MC4 or Comparable weatherproof
Front Cover	3.2 mm prism type tempered glass or higher
Product Warranty and guarantee	10 years' product replacement warranty. Power output within 10 years shall not fall below 90% Power output within 25 years shall not fall below 80%

	<p>10 years' full replacement of module, if the major component/s malfunctioning.</p> <p>PV module performance guarantee 25 years or more.</p> <p>Type of performance guarantee shall be linear after 1st Year.</p>
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2. On-Grid Solar Smart Inverter

Parameters	Min. Specifications required
Inverter Make	1 GW or above deployment in last two years. Renowned and verifiable brand having successful history in similar climatic conditions.
Inverter Type	Grid synchronized Pure Sine wave,
Parameters	Min. Specifications required
	also able to synchronize with generators on site.
Output Voltage Range	230VAC/400 VAC $\pm 5\%$ for string/micro inverters. for central inverters select as per design
IP Protection	IP 65 or better (IEC 60529) / outdoor use with natural heat sink. (Dust protected with natural heat sink)
Standby power consumption	Max 3 Watt.
EU/CEC efficiency Euro-eta	$\geq 95\%$ or above
Protections	<p>Short Circuiting</p> <ul style="list-style-type: none"> ▪ Surge Protection ▪ PV reverse polarity protection ▪ Anti-Islanding Protection ▪ Leakage current protection ▪ High Insulation <p>Input</p> <ul style="list-style-type: none"> ▪ Over voltage (PV) (if built-in) ▪ Harmonics filter as per IEC standards <p>Output</p> <ul style="list-style-type: none"> ▪ Over voltage (AC)
Operating temperature	-5°C to 55°C

Communication	<ul style="list-style-type: none"> ▪ With Remote Monitoring Feature, Mobile App, Web server user interface, Cloud Connected. ▪ Real Time System Monitoring. Alerts, Faults and Warning data display. System Statistics – System Parameters, ▪ PV predicted values, Forecasted values, Load data, Energy ▪ Data, Net Metering Data Control
Humidity	10 ~ 90%RH
THD	<3%. As per relevant IEC clauses.
Performance guarantee	5 years Replacement of inverter, 10 years equipment life
Warranty	10 Years or above transferrable warranty from the original inverter manufacturer shall be provided.
Input Voltage Range	150-950V or above (depend upon the selected design)
Power Factor	0.9 leading 0.9 lagging
Minimum Applicable Standards and Compliances	IEC:62109-1, IEC:62109-2, IEC 61683, IEC 62116, IEC 61727, UL:1741/IEEE:1547, 60068-2.

3. Hybrid Solar Inverter

Parameters	Min. Specifications required
Inverter Make	500MW or above deployment in last five years. Renowned and verifiable brand having successful history in similar climatic conditions. Pure Hybrid Inverter
Inverter Type	Grid synchronized Pure Sine wave, Hybrid
Phase	3 Phase IN /3 Phase OUT
Parameters	Min. Specifications required
	Also able to synchronize with generators on site.
PV INPUT	
Max DC Input Voltage	900 VDC
Minimum MPPT Range	250~850 VDC
Reverse Polarity Protection	Yes
Photo voltaic array isolation control	Yes
AC Grid Connection	Three-Phase
Management	Intelligent Energy Management System
AC INPUT	

Minimum AC Input Voltage Range	180~260 VAC per phase
GRID OUTPUT	
Nominal Output Voltage	230 VAC (P-N)/400 VAC (P-P)
Output Voltage Range	184~265 VAC per phase
Environmental	
Ambient Temperature Range	-5°C~+55°C
Relative Humidity	4...100% condensing
Acoustic noise emission level	<50 dB@ 1m
Safety and EMC standard	IEC/EN 62109, IEC/EN 62109-2, IEC 62477-1, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3, EN61000-3-11, EN61000-3-12
IP Protection	IP 20 or better
Frequency	50Hz +/- 3%
Standby power consumption	Max 3 Watt.
Max. efficiency / Euro-eta	95% or above
Protections	Short Circuiting <ul style="list-style-type: none"> ▪ Surge Protection ▪ PV reverse polarity protection ▪ Leakage current protection ▪ High Insulation Input <ul style="list-style-type: none"> ▪ Over voltage (PV) (if built-in) ▪ Harmonics filter as per IEC standards Output <ul style="list-style-type: none"> ▪ Over voltage (AC)
THD	≤ 3%, As per relevant IEC clauses.
Genset	Compatible with Auto start/stop feature
Communication	With Remote Monitoring Feature, Mobile App, Web server user interface, Cloud Connected
Performance guarantee	5 years Replacement of inverter, 10 years equipment life guarantee
Warranty	5 Years or above transferrable warranty from the original inverter manufacturer shall be provided.

4. Charge Controller

- IEC:62509
- Maximum Power Point Tracking (MPPT) tracing efficiency > 98%
- External/Built-In charge controller with Hybrid Inverter
- Minimum 2 independent MPPTs.
- Warranty- 5 Years transferrable warranty from the original manufacturer.

5. Smart Energy Storage:

Minimum Technical Specifications of Energy Storage System:

- 15 Years life
- Batteries must not be more than 6 months old at the time of installation.
- High Energy, Compact packs.
- Elegant, Highly compact and energy dense
- Battery Management Unit (BMU), BMS (Battery Management System) controls cell temperature, over charging, DOD, Voltage levels & Cell charging current
- Fast and Efficient Charging
- Extended Cycle Life minimum 5000 cycles at 80% DoD.
- Temperature control unit.
- IEC 61427 certified
- Warranty- 5 years

The following technical data but not limited to shall be provided wherever applicable for, such as inverter, charge controller, batteries

	Characteristic
	Manufacturer
	Type/Model number/Date of Manufacture
	Datasheet
	Certifications
	Warranties
	Installation Guide

6. PV Mounting Structure

Description	Requirement
	Tentative outlines, design will be site dependent and may varies
Roof Structure	Hot Dip Galvanized (min 90 Micron) or Aluminum Frame. With more than 20 years of proven life
In case of Pole Mounting	The height of the pole shall not be less than (3) meters. Also be used for parking purpose, strong supporting structure, made of stainless steel or hot dip galvanized iron with minimum galvanization of 90 Microns.
Theft Protection	The mounting structure must come with an anti-theft protection to impede demounting of modules.
Material Gauge	SWG 14 or better / as per design. Fasteners, Nut,Bolts,Clamps must be of stainless steel

Wind loading	Mounting structure to support the module must be made of durable material, resistant to sandstorms, high wind speeds (up to 40 m/s), corrosion (passing the salt spray test IEC 61701, among other verification), and UV induced degradation. The material must be compatible with the module frame material so as to avoid any adverse electrolytic/galvanic effects.
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Civil work	<ul style="list-style-type: none"> ▪ Structure should support the existing roof top/ground mounting ▪ The stability of the supporting structure after installation shall be guaranteed by the bidder. ▪ To avoid the drilling in roofs, use appropriate arrangements for strengthen the structure without damage the roofs. ▪ Pointed dead-loads on rooftop surface must be avoided. ▪ Additional beams can be casted to avoid drilling on roofs ▪ Water drainage must not be considered; separate water channels must be maintained for water drainage. ▪ The supporting structure must be grounded for short-circuit and lightning protection through independent earthing
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7. Cabling, Combiner Boxes and Earthing

- All exposed wiring (with the possible exception of the module interconnects) must be covered in conduits/duct. Wiring through roofing, walls and other structures must be protected through the use of bushings. Wiring through roofing must form a waterproof seal (applicable for wiring only).
- For conduit and duct flexible PVC material with suitable size must be use, so that $\frac{3}{4}$ spaces in a conduit should be empty.
- Field installed wiring must be joined using terminal strips or screw connectors. Soldering or crimping in the field must be avoided if at all possible. Wire nuts are not allowed. The rated current carrying capacity of the joint must not be less the circuit current rating. All connections must be made in junction boxes. Fittings for lights, switches, and polarity sensitive socket outlets may be used as junction boxes where practical.
- All wiring shall be color coded as per IEC standards and labeled at termination point.
- No conduit or fitting shall be attached directly to thatch or any other non- supportive surface
- Especially avoid installing the conduit direct over the roof; there must be distance not less than 2 inches between the roof surface and conduit/duct.
- Cables must be joined by the use of unction boxes, screw-connectors, and block connectors, MC 4 or equaling connectors must be used for PV joints.
- All wires must be terminated with proper end sleeves and wire thimbles with different colors for positive and negative polarity.
- Size, voltage grade and manufacturer name should be printed on every cable
- Cable voltage drop specifications are as followed that must be verified through software simulation/ Calculations.
- Earthing as per NEPRA net metering rules for all sites.

Item	Requirement
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1. PV to inverter:	Voltage drop less than 2% tin coated (Stranded and flexible), 99.9 % pure copper fire resistive insulation (Stranded) All open/ Exposed cables must be UV resistive.
2. Grid / LV DB to Inverter	Voltage drop less than 2%, 99.9 % pure copper fire resistive insulation (Stranded)

7.1 PV Combiner Box (Junction Box)

Parameters	Description
PV Input	As per design
PV Max. Input Voltage	1000VDC (IEC) or Higher
Number of PV array inputs	As per design
Protections	Lightening Protection
	DC over voltage protection
	Short circuit Protection
	Fuse/Breaker Protection.
	AC & DC disconnect
Protection Class	IP 66 or better
Relative humidity	10~90%

8. Enclosure Cabinet for Inverters and Batteries

- The hybrid inverters, batteries, charge controller and any protection devices such as fuses and circuit breakers shall be mounted in an enclosure cabinet. Should be theft proof.
- The enclosure cabinet along with the components shall be installed inside the building. The selection of the required space shall be made by the contractor, approved by the employer.
- The cabinet shall have maximum three compartments.
 - Inverter and Charge Controller
 - Protection devices, breakers/fuses, isolation switch
 - Battery/Electricity storage system
- Adequate natural ventilation shall be present for efficient cooling and prevent excessive heat buildup. The compartment design shall ensure that each component will be operating within its operating temperature.
- The enclosure shall be made of M.S sheet with 18 SWG or better, power coated to matt finish.
- The IP rating of the enclosure cabinet shall be IP 54 or higher.

9. Lightning/air termination rod and Surge Protection devices

Parameters	Min. Specifications Required
Air termination rod material	99 % Copper
Air termination rod length	As per design

Earthing Pit	Less than 2 Ohm (NEC Codes) 99 % Pure copper plate/ rod Size & weight of plate/rod varies from site to site
Air termination rod diameter	As per design
Air termination rod	As per design
Cable for structure	2.5 mm ² or higher, 99.99% pure copper (strip)
Cable for interconnecting/ Grounding metal structure	6 mm ² or higher, 99.99% pure copper
Insulated Spacer	As per design
Cable Bracket	As per design
Stand – Fang Fix system	As per design
Recommended method for calculation	Rolling sphere method
Functional Compliance	IEC 62305-3 (EN62305-3) IEC62305-3 (EN 62305-3) or equivalent

10. Surge Arrester

Parameters	Min. Specifications required
Applications	Both DC side & AC sides
Discharge current (I max)	min. 20kA (8/20 μ sec.)
Impulse current (I imp)	min. 25kA (10/350μ sec.)
Response time	≤ 50 n sec
Leakage current	≤ 1 mA
Dielectric strength	2000 V AC @ 1 minute
Protection Class	Class 2(Type2) minimum
Discharge voltage	600 V DC (Line to earth) or above (matching the size of
Ingress Protection	Minimum IP20 (placed in IP 65 Box along with other protections)
Short circuit withstand	min. 30kA

ADDITIONAL SPECIFICATIONS AS PER REQUIREMENT OF THE PROJECT.

1. SYSTEM DESIGN

The contractor shall provide all design calculations for the output of the proposed installation before the start the execution of works and completion of first payment milestone This shall include the following:

- Solar irradiation at the site, detailing the average and monthly the Global Horizontal Irradiance and Direct Normal Irradiance
- Output of each module and total number of modules required □ Module type, performance specifications and warranties
- Mounting arrangements, inclination and orientation of modules, Shop drawings with Layout out plan and SLD, Design calculation for for PV mounting structure with stud

analysis

- PV system losses
- Electrical system losses
- Temperature co-efficient
- Total Energy Produced
- Performance Ratio
- Total Energy output in kWh to grid per year for power plant with nominal power output verified through software Simulation (PV-syst, HelioScope etc)

2. PANEL MOUNTING STRUCTURE:

- a. The panel mounting and structure should be made of hot dipped (90 microns Average) galvanized steel of minimum thickness of **4.00 mm Angle/ 2.5mm C Shape Channel** (Profile Sketch Attached for Reference at Annex B).
- b. **A sketch of the mounting frame (As per Actual Site Requirements) showing dimensions of the frame parts should be provided at the time of supply.**
- c. Fixed Mounting Structure
- d. The main mounting structure will be fixed tilted at an appropriate angle, facing south and will be made of Steel Hot Dip Galvanized material with vertical posts supported by concrete foundations base 3 inches above roof top level.
- e. The mounting structure must be engineered for wind resistance of 144km/hr
- f. Module should be fixed with the frame through pure SS bolts. The bolts should be tightened at the required angle.
- g. The Nuts, Bolts & Washers for modules & Mounting structures must be stainless steel material with appropriate gauge.
- h. Shading shall be avoided all over the year (around) from 30 minutes after the sunrise to 30 minutes before sunset (For installation purpose only).
- i. To allow regular cleaning of the solar modules, they should be easily accessible for personnel (For installation purpose only).
- j. Each panel frame structure shall be so fabricated as to be grouted using rawal bolts in cement concrete foundation with steel frame structure at the site
- k. Foundation/mounting structure will be fabricated and installed to achieve full life of 25 years under the local climatic conditions.

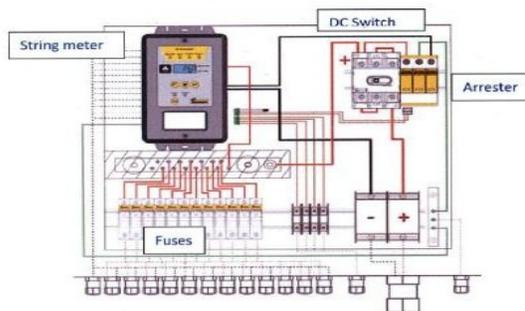
3. Junction Boxes

SMART Junction boxes with the multi-function of string monitor to detect each string's voltage, current, and power, plus fault detection and surge protection function. The array junction box has been suitably designed to be integrated into the PV plant. The junction boxes shall have suitable arrangement for the followings.

- Provide arrangement for disconnection for each of the groups.
- Provide a test point for each sub-group for quick fault location.
- To provide group array isolation.
- The current carrying ratings of the junction boxes shall be suitable with adequate safety factor to inter connect the Solar PV array.
- To include data collector for Monitoring System.

A DC string meter is integrated into a DC box to provide the capability of collecting the required data/information of string level.

The system diagram of junction box is shown below.



4. CIVIL WORK:

The following civil works should be carried out.

- i. Cutting and clearing of trees/plantation to remove the shadow.
- ii. Drilling exploratory bore holes for earthing and consolidation of the area pertaining to the
- iii. installation of SPV modules.
- iv. Embedment of concrete structures suitable for mounting PV modules.
- v. Laying of earthing equipment /structures and connecting to the main ground mat as per the statutory requirements.
- vi. Construction work where necessary
- vii. Cutting of cable trenches etc. wherever necessary
- viii. Cutting of the concrete where trenches will be built.
- ix. Underground civil works for cable layout (Sand, Bricks & Warning Tape etc)

5. EXCEPTIONS AND VARIATIONS:

Any exceptions and variations to the specifications must be explicitly stated. The scope and reasons for each listed exception and variation must be fully explained with supporting data.

6. WHITE REFLECTIVE / INSULATING PAINT

The Roof Paint should be ultra- white, high reflective, 100% acrylic elastomeric roof sealer designed for fixing leaks in roofs the paint should contain heat reflective pigments and additives that provide an excellent, highly protective barrier which reflects the sun's heat and destructive UV rays leaves a brilliant ultra- white finish, reducing surface heat absorption up 20°F.

The Reflective paint should comply with ASTM D6083, Fiber Reinforced for more protection, strength and durability which allows for contraction and expansion, Resists surface fungal growth.

7. OTHER FEATURES:

- a. The PV Module(s) should be warranted for a minimum period of 25 years from the date of supply, inverter with five years and the battery should be warranted for a period of 05 year from the date of installation. The warranty card to be supplied with

the system must contain the details of the system. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.

- b. Adequate space should be provided behind the PV module/array for allowing unobstructed airflow for passive cooling.
- c. Cable of appropriate size should be utilized to keep electrical losses to a bare minimum (e.g. length of the wire from module to combiner Box and Combiner Box to Hybrid Inverter should be as minimum as possible).
- d. The control electronics should not be installed directly with the battery. All wiring should be in proper conduit of capping casing. Wire should not be hanging loose.
- e. Instruction and O&M manuals
- f. Two copies of Instruction and Operation and Maintenance Manual in English and local language should be provided with the system.
- g. The manual shall be furnished at the time of dispatch of the equipment and shall include the following aspects:
 - h. Precautions during unpacking
 - i. Instructions for handling at site.
 - j. Erection drawings with written assembly instructions that would enable the Employer to carry out erection with his own personnel if opted by him.
 - k. Detailed instructions and procedures for the installation operation and maintenance.
 - l. Pre-commissioning tests.
 - m. About solar PV system – its components and expected performance.
 - n. Clear instructions about mounting of PV module (s)
 - o. About electronics
 - p. DO's and DONT's
 - q. Principle of Operation of various equipment
 - r. Safety and reliability aspects
 - s. Metering scheme
 - t. About power conditioning units software and controls
 - u. Clear instructions on regular maintenance and troubleshooting of solar power plant.
 - v. Name and address of the person or service center to be contacted in case of failure or complaint.
- w. Outline dimension drawings showing relevant cross sectional views, earthing details, constructional features. Rated voltages and current etc.

8. OPERATION AND MAINTENANCE:

SCOPE OF SERVICES (O&M)

The contractor must provide operation and maintenance services for a period of One Year including One (01) year defect liability period following which it must provide the institute with comprehensive Operation and Maintenance manuals. The responsibility of the contractor includes but are not limited to ensure remote monitoring facility at site specified by the client, periodic preventive maintenance, corrective maintenance, capacity building of institute personnel and reporting must be provided as per the O&M form.

The contractor will provide a preventive schedule of maintenance, activities to be carried out during maintenance, skill, and competency of the maintenance personnel. The contractor will provide date of visit and list of authorized personnel to visit the institute for maintenance activities. All maintenance personnel must carry identity card to enter the facility.

The PV Generator is designed for an operation lifetime of at least 20 years. Its optimal performance is sensitive to best-in-class O&M practices, which will ensure the best performance during the 20-years period. The bidder is required to describe in detail his definite plans how to execute the below described requirements for the O&M period. As part of that the bidder shall provide an organizational chart and CVs of the key O&M staff as well as the locations where staff and facilities (e.g., spare parts inventory) will be located.

GENERAL SCOPE OF WORK (O&M)

The contractor has to warrant the performance of the PV Generator within its area of influence, as well as the availability and time consumed for detection of malfunctions and its repair.

This shall include, but not be limited to, the following items:

- Preventive maintenance will be done quarterly according to maintenance programs, such as periodic preventive maintenance of inverters, and PV modules etc., according to manufacturers' requirements.
- Scheduled inspection routines: e.g., PV modules to check for discoloration, first signs of delamination, loose wires in the electronics, corrosion of mounting structures, erosion.
- Maintenance of spare parts inventory (prompt replenishment of used spare parts) including continuous reporting of status and consumption. Corrective maintenance with guaranteed response and reaction times, including all repair and replacement costs which shall not be more than 7 days (backup units must be provided during this period for the supply of uninterrupted power). Technical operation of the PV Generator including presence of O&M personnel close to the Project site as required to fulfil all O&M Contract obligations.
- Regular cleaning of the PV Generator site every 15 days, preventive

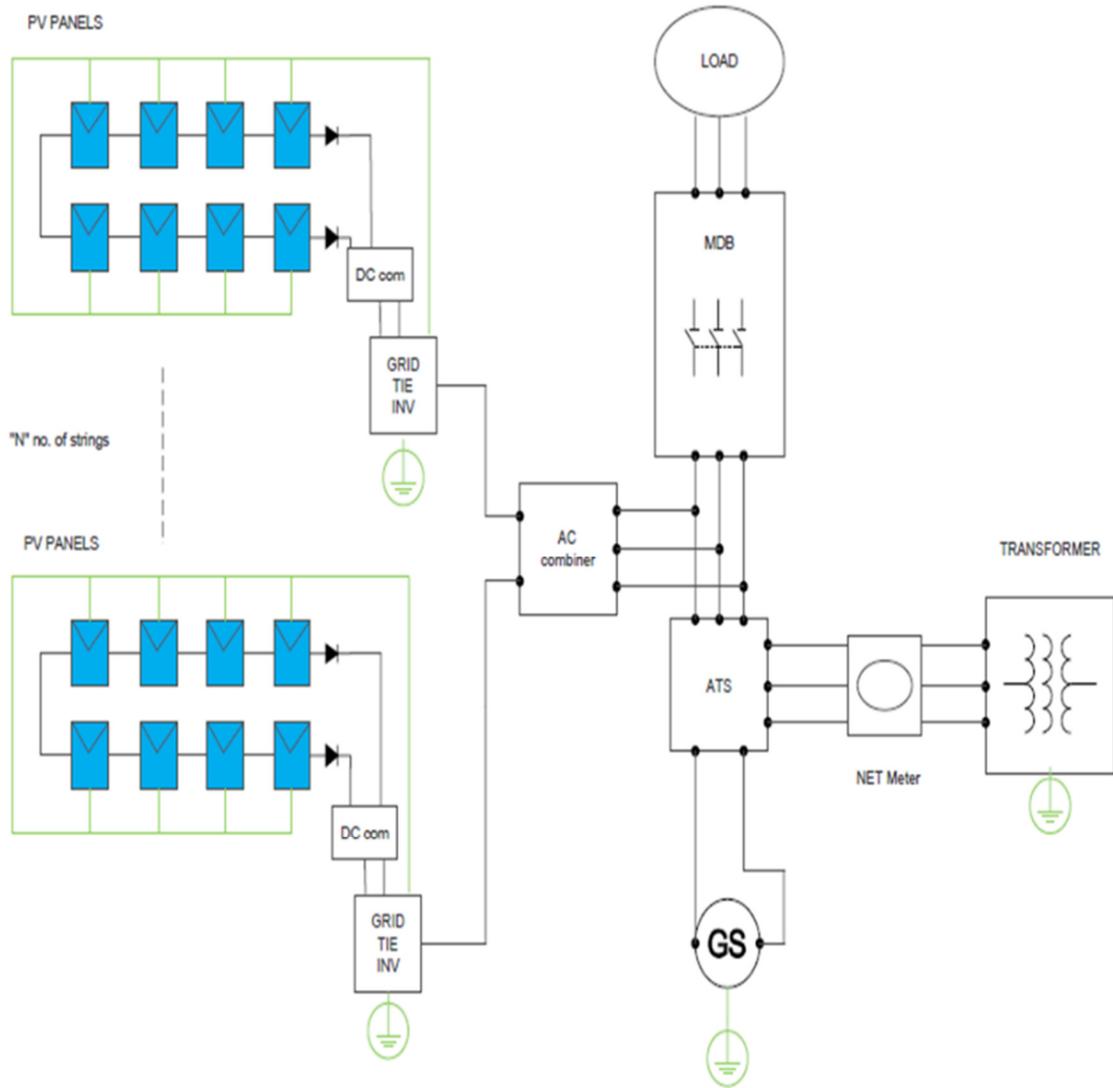
and corrective maintenance of civil works.

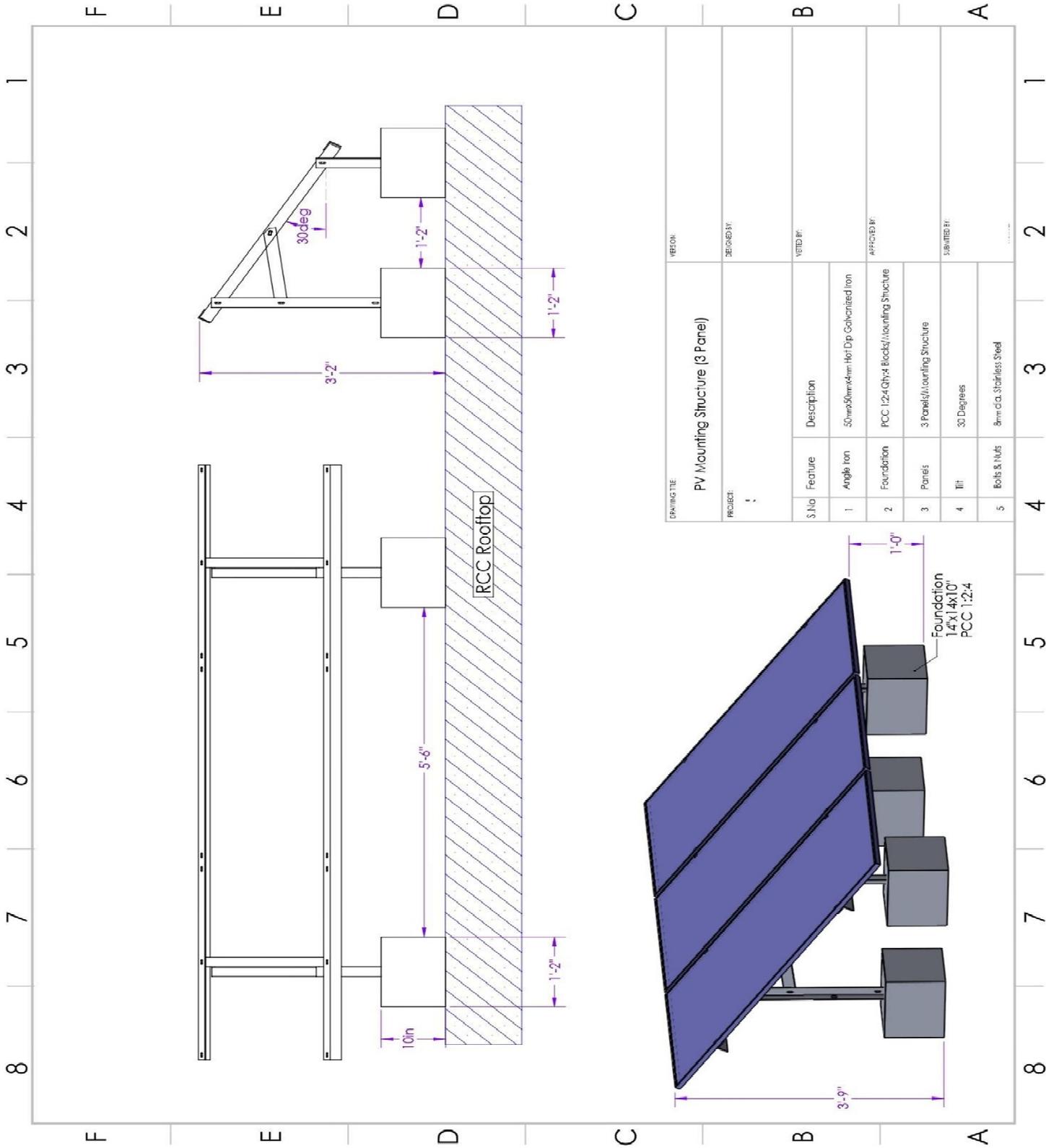
- Smooth functioning of data communications over Remote Monitoring System.
- Provision of regular service reports about performance, repairs, maintenance, and tests.
- Regular performance of variance analysis of the entire fleet of PV Generators.
- Ensuring that any warranties and insurance policies for the PV Generator are assignable / transferrable to Employer
- Provision of all O&M personnel trained and certified as far as applicable. The staffing concept and selected key employees shall be presented to the Employer for approval.
- Capacity Building/Training of the Government Institute personnel for preventive and corrective maintenance.
- Online Complaint Management System should be provided for proper/timely management of the sites.
- 24/7 Helpline contact numbers must be placed near the inverters/DB in metal embossed for emergency/trouble shooting.
- Equipment damaged during this period as a result of improper operations, inadequate maintenance or poor security measures shall be replaced or repaired by the contractor at their expense.
- The contractor shall detail all personnel requirements, security measures, scheduled equipment replacements, maintenance schedules and operational procedures for each year.
- The contractor shall include a guarantee of annual minimum energy output for the PV power plant quoted. Any shortfall in output below this guaranteed minimum shall be paid by the contractor to the client at rates charged by Wapda per kWh at the time of the shortfall.
- This minimum energy output shall be detailed by the contractor in their proposal by completing the table below:

Size of PV Plant	Total energy output in kWh to grid per year	Guaranteed minimum annual output to the grid (kWh)

O&M Operations should be performed as per below format. Log should be maintained submitted to PEECA and client after every 3 months for all the mentioned buildings duly signed as and when applicable as per the conditions mentioned above.

EMPLOYER DESIGN





DRAWING TITLE:		PV Mounting Structure (3 Panel)	
PROJECT:		1	
VERBOK:		DESIGNED BY:	
VERIFIED BY:		APPROVED BY:	
SUBMITTED BY:			
S.No	Feature	Description	
1	Angle Iron	50mmx50mmx4mm Hot Dip Galvanized Iron	
2	Foundation	PCC 1:2:4 (1:2:4 Blocks)/Mounting Structure	
3	Panels	3 Panels/Mounting Structure	
4	Tilt:	30 Degrees	
5	Bolts & Nuts	8mm dia, Stainless Steel	