

# **DOW UNIVERSITY OF HEALTH SCIENCES**



## **BIDDING DOCUMENTS**

**Single Stage – Two Envelope Procedure**

**As per Rule 46 (2) of SPPRA, 2010 (Amended up to date)**

**NIT No. DIR(W&S-DUHS-SIDH&RC)/NIT-2025-26/1557,**

**DATED: AUGUST 12, 2025**

**SUPPLY, INSTALLATION, TESTING AND  
COMMISSIONING OF 217 KWP SOLAR PV PLANT  
AT SINDH INFECTIOUS DISEASES HOSPITAL (SIDH),  
KARACHI**

**(REF NO: DIR(W&S-DUHS/SIDH&RC)-NIT-08)**

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## **B: BID DATA SHEET**

The following specific data shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB) / Terms & Conditions. Whenever there is a conflict, the provisions herein shall prevail over those in ITB / T&C.

1.	<b>Name of Procuring Agency:</b>	Dow University of Health Sciences, Karachi (DUHS)
2.	<b>Bidding Procedure:</b>	Single Stage – Two Envelope through online EPADS
3.	<b>Name of Contract:</b>	SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 217 KWP SOLAR PV PLANT AT SINDH INFECTIOUS DISEASES HOSPITAL (SIDH), KARACHI.
4	<b>Tender fee:</b>	Rs. 5,000/- (Five Thousand Rupees Only) Non-Refundable in shape of Pay Order / Demand Draft in favor of Dow University of Health Sciences, Karachi.
5.	<b>Submission of Tender fee &amp; Bid Security Address:</b>	Office of the Medical Superintendent, Sindh Infectious Diseases Hospital & Research Center, ST-8, Block No. 10, Gulshan-e-Iqbal, Karachi. Phone No. 021-99244711
6.	<b>Language of the Bid:</b>	English
7.	<b>Currency of the Bid:</b>	The price quoted shall be in Pakistani Rupee on DDP Basis
8.	<b>Bid Prices:</b>	The price shall be fixed during the contract period.
9.	<b>Bid Security:</b>	The amount of bid security shall not be less than <b>Rs 2.5%</b> of the total contract value in the form of a Call Deposit, Bank Draft or a Bank Guarantee issued by a scheduled bank of Pakistan, in favour of the Dow University of Health Sciences, Karachi.
10.	<b>Bid Validity Period:</b>	90 days
11.	<b>Tender Purchasing date:</b>	As Per NIT
12.	<b>Deadline for bid submission:</b>	As Per NIT (Online through EPADs at <a href="https://eprocure.gov.pk/">https://eprocure.gov.pk/</a> )
13.	<b>Date, Time and Place of Bid opening:</b>	As Per NIT (Online through EPADs at <a href="https://eprocure.gov.pk/">https://eprocure.gov.pk/</a> )
14.	<b>Alternate Bid:</b>	Not Allowed
15.	<b>Joint Venture / Consortium Bid:</b>	Not Allowed
16.	<b>Required Delivery Schedule from the Date of Contract award.</b>	Delivery & Installation within 60 to 70 Days or earlier.
17.	<b>Performance Security:</b>	Amount of <b>shall not be less than 5% of the total contract value.</b>

## **C: INSTRUCTIONS TO BIDDERS. (ITB)**

### **1. INTRODUCTION**

#### **1 SCOPE**

**1.1 “SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 217 KWP SOLAR PV PLANT AT SINDH INFECTIOUS DISEASES HOSPITAL (SIDH), KARACHI”.** Through Bidding Single Stage Two Envelope Procedure as per SPPRA Rules-2010 (Amended up to date). (Online through EPADS at <https://eprocure.gov.pk/>)

#### **2 ELIGIBLE BIDDERS**

- 2.1. This Invitation for Bids is open to all Engineering firms / contractors Authorized Agents / Sole Distributors within Pakistan, having valid authorization certificate of the product.
- 2.2. Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the University to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation for Bids.
- 2.3. Government-owned enterprises may participate only if they are legally and financially autonomous, if they operate under commercial law, and if they are not a dependent agency of the Federal Govt. or Provincial Govt.
- 2.4. Bidder should not be eligible to bid if they are under a declaration of ineligibility for corrupt and fraudulent practices issued by any Government organization in accordance with sub **clause 35.1.**
- 2.5. **Joint Venture not allowed**

#### **3 ELIGIBLE GOODS**

- 3.1 All goods and related services to be supplied under the contract shall have their origin in eligible source countries and all expenditures made under the contract shall be limited to such goods and services. For this purpose, the term “Goods” includes any Goods that are the subject of this Invitation for Bids and the term “Services” shall include related services such as transportation, insurance etc. **The “Origin” means the place where the “goods” are mined, grown, or produced, or the place from which the “related services” are supplied.** Goods are produced through manufacturing or processing, or substantial and major assembly of ingredients / components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

## **2. THE BIDDING PROCEDURE**

Single Stage - Two Envelope Procedure under Rule 46(2) of SPPRA Rules, 2010 Amended up to date. (Online through EPADS at <https://eprocure.gov.pk/>)

- (a) Procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;
- (b) No amendments in the technical proposal shall be permitted during the technical evaluation;
- (c) Financial proposals of technically qualified bids shall be opened online on EPADS.
- (d) Financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders; and
- (e) Bid found to be the lowest evaluated or best evaluated bid shall be accepted.

## **3. THE BIDDING DOCUMENTS**

### **CONTENTS OF BIDDING DOCUMENTS**

#### **3.1 The Bidding Documents:**

In addition to the Invitation for Bids (IFB) / Tender Notice, the bidding documents include:

- i. Instructions to Bidders (ITB);
- ii. General Conditions of Contract (GCC);
- iii. Special Conditions of Contract (SCC);
- iv. Schedule of Requirements;
- v. Technical Specifications;
- vi. Contract Form;
- vii. Manufacturer's Authorization Form;
- viii. Performance Guarantee Form;
- ix. Bid Form; and
- x. Price Schedules.

3.2 In case of discrepancies between the Invitation for Bids (IFB) / Tender Notice and the Bidding Documents, the Bidding Documents shall take precedence

3.3 The bidders are expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish complete information required in the bidding documents or to submit a bid not substantially responsive to the bidding documents may result in rejection.

### **AMENDMENT / CLARIFICATION OF BIDDING DOCUMENTS**

3.4 An interested bidder, who has obtained bidding documents, may request for clarification of contents of the bidding document in accordance with the Rule 23(1) of SPPRA Rules, 2010 (Amended up to date).

- 3.5 At any time prior to the deadline for submission of bids, the Procuring Agency may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the bidding documents by amendment.
- 3.6 All prospective bidders that have received the bidding documents will be notified the amendment(s) in writing, which will be binding on them.
- 3.7 In order to allow prospective bidders reasonable time to take the amendment(s) into account in preparing their bids, the Procuring Agency may, at its discretion, extend the deadline for submission of the bids.

## **4. PREPARATION OF E-BIDS**

### **LANGUAGE OF BID**

#### **4.1 Preparation of Bids**

The bid prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and the Procuring Agency shall be in English. Supporting documents and printed literature furnished by the bidder may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case for purposes of interpretation of the Bid, the translated version shall prevail.

### **DOCUMENTS COMPRISING THE BID**

- 4.2 The bid prepared by the Bidder shall comprise the following:
- (a) Bid Form;
  - (b) Price Schedule;
  - (c) Documentary evidence to the effect that the Bidder is eligible to bid and is qualified to perform the Contract if its bid is accepted;
  - (d) Documentary evidence to the effect that the goods to be supplied by the Bidder are eligible goods and related services as defined in clause-3 and conform to the bidding documents; and Bid Security.

### **BID PRICES**

- 4.3 The prices and discounts quoted by the Bidder in the Bid Form and in the Price Schedules shall conform to the requirements specified below.
- 4.4 All items in the Schedule of Supply must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Items not listed in the Price Schedule shall be assumed not to be included in the Bid.
- 4.5 The price to be quoted in the Bid Form shall be the total price of the Bid excluding any discounts offered.
- 4.6 The Bidder shall quote any unconditional discounts and the methodology for their application in the Bid Form.
- 4.7 Prices proposed in the Price Schedule Forms for Goods / services, shall be disaggregated, when appropriate. This disaggregation shall be solely for the purpose of facilitating the comparison of

Bids by the Procuring Agency. This shall not in any way limit the Procuring Agency's right to contract on any of the terms offered:

- a) Price Schedule For Goods offered from within the Procuring Agency's country:
  - i. Detailed Specification of Stores
  - ii. Model / Cat No.
  - iii. Name of Manufacturer.
  - iv. Country of Origin
  - v. Quantity of Stores
  - vi. Unit
  - vii. The unit price of the goods quoted on delivered duty paid (DDP) basis, including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of goods, or on the previously imported goods of foreign origin;
  - viii. If there is no mention of taxes, the offered/quoted price will be considered as inclusive of all prevailing taxes/duties. The benefit of exemption from or reduction in the GST or other taxes during the contract period shall be passed on, excluding GST ( as University is exempted from GST), to the Procuring Agency; and
  - ix. The total price for the item.

4.8 Final Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account. A Bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected.

## **BID CURRENCIES**

4.9 Prices shall be quoted in Pak Rupees unless otherwise specified in the Bid Data Sheet.

## **DOCUMENTS ESTABLISHING BIDDER'S ELIGIBILITY AND QUALIFICATION**

4.10 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Procuring Agency's satisfaction:

- (a) that, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' Manufacturer or producer to supply the goods in the Procuring Agency's country;
- (b) that the Bidder has the financial, technical, and production capability necessary to perform the contract;
- (c) that, in the case of a Bidder not doing business within the Procuring Agency's country, the Bidder is or will be (if awarded the contract) represented by an Agent in that country equipped, and able to carry out the Bidder's maintenance, repair, and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical

- Specifications; and
- (d) That the Bidder meets the evaluation & qualification criteria of bidding document.

#### **DOCUMENTS ESTABLISHING GOODS' ELIGIBILITY AND CONFORMITY TO BIDDING DOCUMENTS**

- 4.11 Pursuant to ITB Clause 8, the Bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the bidding documents of all goods and services which the Bidder proposes to supply under the contract.
- 4.12 The documentary evidence of the eligibility of the goods and services shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.
- 4.13 The documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings, and data, and shall consist of:
- (a) a detailed description of the essential technical and performance characteristics of the goods; and
  - (b) an item-by-item commentary on the Procuring Agency's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.
- 4.14 For purposes of the commentary to be furnished pursuant to ITB Clause 12.3(b) above, the Bidder shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Procuring Agency in its Technical Specifications, are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names, and/or catalogue numbers in its bid, provided that it demonstrates to the Procuring Agency's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

#### **BID SECURITY**

- 4.15 The Bidder shall furnish, as part of its proposal, a Bid Security in the amount and currency specified in the Bid Data Sheet and SCC. Unsuccessful bidders' Bid Security will be returned. The successful Bidder's Bid Security will be discharged upon signing of contract and furnishing the Performance Security bond, duly guaranteed by a scheduled bank.
- 4.16 The Bid Security shall remain valid for a period of 28 days beyond the bid validity period.
- 4.17 The Bid Security is required to protect the Procuring Agency against the risk of Bidder's conduct, which would warrant the Security's forfeiture;
- 4.18 The Bid Security may be forfeited:
- a. if a Bidder withdraws its bid during the period of bid validity; or
  - b. in the case of a successful Bidder, the Bidder fails:
    - i). to sign the Contract; or



- ii). to complete the supplies / services in accordance with the general Conditions of contract.

#### **BID VALIDITY**

- 4.19 Bids shall remain valid for 90 days from the date of its opening. A bid valid for a shorter period shall be treated as non-responsive and rejected.
- 4.20 The Procuring Agency shall ordinarily be under an obligation to process and evaluate the bids within the stipulated bid validity period. However, for any reasons to be recorded in writing, if an extension is considered necessary, all those who have submitted their bids shall be asked to extend their respective bid validity period.

#### **ALTERNATIVE BIDS**

- 4.22 Unless otherwise indicated in the BDS, alternative bids shall not be considered.

### **5. SUBMISSION OF E-BIDS ONLINE ON EPADS**

#### **ALL BIDS SHOULD BE SUBMITTED ONLINE THROUGH SPPRA EPADS**

##### **DEADLINE FOR SUBMISSION OF BIDS AS PER NIT**

- 5.1 The Procuring Agency may, at its convenience, extend this deadline for submission of bids by amending the bidding documents in which case all rights and obligations of the Procuring Agency and the Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

#### **LATE BID**

- 5.2 All bids should be submitted online through SPPRA EPADS, Later E-Submission/uploading not acceptable.

#### **WITHDRAWAL OF BIDS**

- 5.3 The Bidder may after its submission withdraw prior to the expiry of the deadline prescribed for submission of bids.

### **6. OPENING AND EVALUATION OF BIDS**

#### **OPENING OF BIDS BY THE PROCURING AGENCY**

- 6.1 The Procuring Agency will open all bids Online through EPADS system ,as per NIT date & time.
- 6.2 except for late bids, which shall be returned unopened to the Bidder pursuant to ITB Clause 18.
- 6.3 Bids that are submitted on SPPRA shall not be considered further for evaluation, irrespective of the circumstances. Withdrawn bids will be returned unopened to the bidders.

#### **CLARIFICATION OF BIDS**

- 6.4 During evaluation of the bids, the Procuring Agency may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the prices or substance of the bid shall be sought, offered, or permitted.

## **PRELIMINARY EXAMINATION**

- 6.5 The Procuring Agency will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
- 6.6 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If the Supplier does not accept the correction of the errors, its bid will be rejected, and its bid security may be forfeited.
- 6.7 The Procuring Agency may waive any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.
- 6.8 Prior to the detailed evaluation, pursuant to ITB Clause 23 the Procuring Agency will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from, or objections or reservations to critical provisions, such as those concerning Bid Security, Applicable Law, and Taxes and Duties, will be deemed to be a material deviation. The Procuring Agency's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 6.9 If a bid is not substantially responsive, it will be rejected by the Procuring Agency and may not subsequently be made responsive by the Bidder by correction of the nonconformity.

## **EVALUATION AND COMPARISON OF BIDS**

- 6.10 The Procuring Agency will evaluate and compare the bids which have been determined to be substantially responsive, pursuant to ITB Clause 22.
- 6.11 The Procuring Agency's evaluation of a bid will be on delivered duty paid (DDP) basis inclusive of prevailing duties/taxes/levies.
- 6.12 The Procuring Agency's evaluation of a bid will take into account, in addition to the bid price quoted, one or more of the following factors, and quantified in ITB Clause 24:

### **Incidental costs**

Incidental costs provided by the bidder will be added by Procuring Agency to the bid price at the final destination.

### **Delivery schedule offered in the bid**

The goods covered under this invitation are required to be delivered / shipped within an acceptable range of weeks specified in the Schedule of Requirement.

### **Deviations in payment schedule from that specified in the Special Conditions of Contract**

Bidders shall state their bid price for the payment schedule outlined in the SCC. Bids will be evaluated on the basis of this base price

- 6.13 For the purpose of comparison of bids quoted in different currencies, price shall be converted into Pakistani Rupees. The rate of exchange shall be the selling rate prevailing seven working days before the date of opening of the bids, as notified by the National Bank of Pakistan (NBP) / State Bank of Pakistan (SBP).

## QUALIFICATION / EVALUATION CRITERIA (MANDATORY REQUIREMENTS)

### A. QUALIFICATION REQUIREMENTS

S#	Qualification Criteria (Mandatory Requirements)
1.	<b>Compliance to the Technical Specifications.</b> The bidder is required to provide the relevant document such as Sketches, Drawings, Catalogues, Brochures, Technical Data Sheet duly highlighting the complete technical specifications of the offered goods along with the dimensions and details of material.
2.	Technical Proposal on Bidder's Letterhead
3.	Item-wise / Feature-wise product compliance / deviation sheet /statement.
4.	Valid Manufacturer Authorization in accordance with ITB Clause 11.1 (a). Only manufacturer and its sole / authorized agent can quote the goods, no sub distributors / spot authorized agent is allowed to bid.
5.	Copy of CNIC of signatory of the Bid Forms
6.	Complete Bidding Document, duly signed and stamped on its each/every page as acceptance of all terms & conditions.
7.	Valid General Sales Tax (GST-FBR) Registration with Active Tax Payer Status on FBR website ( <i>for supply of goods</i> )
8.	Valid Income Tax (FBR) Registration with Active Tax Payer Status on FBR website
9.	Valid PEC Registration Certificate in appropriate category C5 or above with the specialization following codes EE04, EE11.
10.	Tender Purchase Receipt (Scanned)
11.	Affidavit on stamp paper of Rs. 100/- duly notarized to the effect that: <b>i.</b> The bidder is neither blacklisted nor suspended by any National /International, including Provincial and Federal Government. <b>ii.</b> Any director or owner of the bidding company is not awarded any punishment from any Court of Law. <b>iii.</b> Bidder has submitted the correct and complete information along with the bid/offer. If any document / information is found forged / engineered / fake/ bogus at any stage, the bidder may be declared as Blacklisted in accordance with law and the performance guarantee and payment, if any may be forfeited.
12.	Bid Security shall be submitted at DUHS before the opening of the tender However, a copy of the same shall be inserted in the Technical Proposal after hiding the amount.
13.	Company Profile
14.	Valid Electrical Inspector License.
15.	Valid AEDB or Equivalent license for Net-metering in category C-3.
16.	During the last three (3) years bidder had completed (05) project / contract for supplying, fixing, installation, & commissioning the quoted for the physical verification of quality of offered products (valid documentary evidence (contract award / purchase order to be attached).
17.	Average annual turnover (total income) in preceding 3 years should not be less than Rs. 10 million demonstrated through audited annual financial statements / income tax returns / original bank certificate.
18.	List of technical staff of bidders
19.	Solar panels must have minimum 12 years warranty. Solar Inverter must have minimum 5 years warranty. Panel fixing mountings must have minimum 10 years warranty. Minimum 1 year workmanship warranty should be provided by bidder.
20.	All the proposed products should be well known, well reputed brands and widely used for its quality, performance and reliability

**B. CRITERIA FOR BID EVALUATION**

**i. Technical Proposal Evaluation:**

- a) The bids disqualified / not responsive to the **MANDATORY QUALIFICATION CRITERIA** provided at ITB Clause 24(A) shall not be eligible for further Technical Evaluation.
- b) Conditional Bids, Telegraphic Bids, Bids not accompanied by Bid Security of required amount and form, bids received after specific date and time and bids of Black Listed firms shall be treated as rejected / non-responsive.
- c) The bids shall be evaluated and compared on **ITEMIZED BASIS** reflected in the Section: G – Technical Specifications.
- d) **Bids are invited as per Single Stage – Two Envelope Procedure** in accordance with sub rule 2 of rule 46 of the Sindh Public Procurement Rules, 2010 (Amended upto date). **In case, any bidder encloses the financial bid within the technical bid, the same shall be rejected summarily.**
- e) Only those Financial Bids / Proposals will be announced / considered which were technically qualified.
- f) Bidders achieving **minimum 70% points / marks** will be considered only for further process besides compliance of all mandatory clauses. Documentary evidence must be attached in support of your claim.
- g) Based on the record / documentary evidence submitted by the bidders, each firm shall be technically evaluated as per following merit point system for weighing evaluation factors / criteria.

**ELIGIBILITY CRITERIA**

S.no	Description	Total Marks	Marks Obtained	Remarks	Attachment of relevant evidence in each case is mandatory.in case of non compliance no mark will be awarded	Evidence Attached
1	YEARS IN BUSINESS IN THE REQUISITE FIELD (AS A SUPPLIER, FIXING, INSTALLATION & COMMISSIONING OF SOLAR SYSTEMS)	10		5 YEAR AND ABOVE	NTN CERTIFICATE IS REQUIRED TO BE ENCLOSED	
		7		3 YEAR AND ABOVE		
		5		2 YEAR		
2	VALID KARACHI ELECTRICAL LICENSE OF BIDDER	10		YES	DOCUMENTARY PROOF TO BE ATTACHED.	
		0		NO		

3	VALID AEDB OR EQUIVALENT LICENSE	10  Disqualify		C-3 category  Any Other	DOCUMENTARY PROOF TO BE ATTACHED.	
4	PEC REGISTRATION CATEGORY WITH SPECIALIZATION CODES OF EE03, EE04, EE05, EE11 (Solar Energy System) and (General Electrical Works only) OF BIDDER	20		C5 OR ABOVE WITH MENTIONED CODES	DOCUMENTARY PROOF TO BE ATTACHED.	
		0		C5 OR ABOVE WITHOUT MENTIONED CODES		
5	COUNTRY OF ORIGIN OF INVERTERS	10		European/ TOP 6 CHINA Bloomberg Rated	DOCUMENTARY PROOF TO BE ATTACHED	
		5		ANY OTHER		
6	IMPORTED ITEMS DELIVERY TIME	10		READY STOCK	DOCUMENTARY PROOF TO BE ATTACHED	
		5		WITHIN 45 DAYS		
7	SERVICE CENTER AND TRAINED ENGINEER	5		AVAILABLE IN KARACHI	DOCUMENTARY PROOF TO BE ATTACHED	
		0		NOT AVAILABLE		
8	ELECTRICAL & MECHANICAL PEC ENGINEER	5		AVAILABLE	DOCUMENTARY PROOF TO BE ATTACHED	
		0		NOT AVAILABLE		
9	EXPERIENCE OF SIMILAR PROJECTS	20		5 OR MORE	Copy of Work order / PO / agreement / Satisfactory Performance Certificates /Invoices/other related documents must be attached for points.	
		5		LESS THAN 5		
		0		LESS THAN 3		
	TOTAL MARKS	100		QUALIFIED / DISQUALIFIED		

**NOTE:**

- 1 ATTACHMENT OF RELEVANT EVIDENCE IN EACH ABOVE REQUISITE IS MANDATORY. IN CASE OF NON-PROVISION OF EVIDENCE IN ANY OF THE REQUISITE, NO MARKS WILL BE AWARDED.
- 2 ACQUIRING OF 70% MARKS OF THE TOTAL SCORE WILL MAKE THE BIDDER QUALIFY IN ELIGIBILITY CRITERIA.

**ii. FINANCIAL PROPOSAL EVALUATION:**

- a) Technically qualified/successful bidder(s) shall be eligible for Financial Proposal(s).
- b) Financial Bids / Proposals of Technically disqualified / rejected / non responsive bidders will not be opened on EPADS. Financial Bids / Proposals of Technically disqualified / rejected bidders will not be opened from EPADS and sealed envelope of bid security shall be returned to the bidder.
- c) Bids not accompanied by the Bid Security of required amount and form shall be rejected.
- d) Procuring Agency shall not be responsible for any erroneous calculation of taxes and all differences arising out shall be fully borne by the Successful Bidder.
- e) For the purpose of comparison of bids quoted in different currencies (if applicable), price shall be converted into Pakistani Rupees. The rate of exchange shall be the selling rate prevailing seven working days before the date of opening of the bids, as notified by the National Bank of Pakistan (NBP) / State Bank of Pakistan (SBP).

**CONTACTING THE PROCURING AGENCY**

- 6.14 No bidder shall contact the Procuring Agency on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded. If any bidder wishes to bring additional information to the notice of the Procuring Agency, it may do so in writing.
- 6.15 Any direct or indirect effort by a bidding firm to influence the Procuring Agency during the process of selection of a bidder or award of contract may besides rejection of its bid result into its disqualification from participation in the Procuring Agency's future bids.

**REJECTION OF BIDS**

- 6.16 Notwithstanding anything stated here-before after the Procuring Agency may reject any or all bids at any time prior to the acceptance of a bid. The Procuring Agency may upon request,

communicate to a bidder, the grounds for its rejection, but shall not be under obligation to justify those grounds.

### **RE-TENDERING**

- 6.17 If the Procuring Agency has rejected all bids, it may move for a Re-Tendering or may seek any alternative method of procurement under the provisions of the prevailing Rules.

### **ANNOUNCEMENT OF EVALUATION REPORT**

- 6.18 The Procuring Agency will announce the Evaluation Report and the resultant acceptance or rejection of bids at least three days prior to the award of procurement contract.

## **7. AWARD OF CONTRACT**

### **ACCEPTANCE OF BID AND AWARD CRITERIA**

- 7.1 The bidder with lowest evaluated bid under clause 22, 23 & 24, if not in conflict with any other law, rules, regulations or policy of the Government, will be awarded the contract within the original or extended period of bid validity.

### **PROCURING AGENCY'S RIGHT TO VARY QUANTITIES**

- 7.2 The Procuring Agency reserves the right to increase or decrease the quantity of stores originally specified in the Price Schedule and Schedule of Requirements without any change in unit price or other terms and conditions.

### **LIMITATIONS ON NEGOTIATIONS**

- 7.3 The Procuring Agency reserves the right to hold negotiation of delivery schedule or completion schedule for all the items or any item.
- 7.4 Negotiations will not be used to change substantially:
- i. the technical quality or details of the requirement, including the tasks or responsibilities of the bidder or the performance of the goods;
  - ii. the terms and conditions of the Contract and;
  - iii. anything affecting the crucial or deciding factors in the evaluation of the proposals / bid and / or selection of successful bidder.

### **NOTIFICATION OF AWARD**

- 7.5 Prior to the expiry of the original or extended period of bid validity, the successful bidder will be informed in writing of acceptance of its bid by the Procuring Agency.

### **SIGNING OF CONTRACT**

- 7.6 While conveying acceptance of bid to the successful bidder, the Procuring Agency will send the bidder Contract Form provided in the bidding documents, incorporating all points



of agreement between the Parties.

- 7.7 Within thirty (30) days of receipt of the Contract Form, the successful Bidder and the Procuring Agency will sign and date the Contract on legal stamp paper valuing 0.35% of the value of contract, (cost shall be borne by the bidder). In case the successful Bidder, after completion of all codal formalities, shows inability to sign the Contract, its Bid Security shall be forfeited. The firm may also be blacklisted from taking part in any future bidding of Procuring Agency for a period upto five Years. In such a situation, the Procuring Agency may make the award to the next lowest evaluated responsive bidder or for Re-Tendering.

### **PERFORMANCE SECURITY / GURANTEE**

- 7.8 The successful Bidder shall furnish Performance Security. Upon submission of Performance Security, the Bid Security will be returned to the Bidder. The amount of Performance Security is specified at Bid Data Sheet.
- 7.9 Failure of the successful Bidder to comply with any of the requirements specified in this document shall be considered as sufficient grounds for the annulment of the award and forfeiture of the Bid Security, in which event the Procuring Agency may make the award to the next lowest evaluated Bidder at the risk and cost of the former.

### **CORRUPT OR FRAUDULENT PRACTICES**

- 7.10 The Procuring Agency and the Bidders / Manufacturers / Contractors are expected to observe the highest standard of ethics during the procurement and execution of the Contract. In pursuance of this policy, the relevant terms / phrases as may apply are defined below:
- (i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution; and
  - (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract to the detriment of the Procuring Agency, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial noncompetitive levels and to deprive the Procuring Agency of the benefits of free and open competition;
- 7.11 The Procuring Agency will take all possible administrative / legal measures if it is found that the Bidder recommended for award was / is engaged in corrupt or fraudulent practice(s) before or after signing of the contract resulting into the conviction of the proprietor under criminal case besides blacklisting of the firm either indefinitely or for such period of time as may be determined by the Procuring Agency.
- 7.12 Will declare a firm ineligible, either indefinitely or for a stated period of time, for the award of a Contract if it, at any time, determines that the firm has engaged in corrupt or fraudulent practices in competing for or in executing a Contract.

## **D: GENERAL CONDITIONS OF CONTRACT (GCC)**

### **1. DEFINITIONS**

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

- (a) "The Contract" means the agreement entered into between the Procuring Agency and the Bidder, as recorded in the Contract Form signed by the Parties, including all attachments and appendices thereto and all documents incorporated by reference therein. .
- (b) "The Contract Price" means the price payable to the Bidder under the Contract for the full and proper performance of its Contractual obligations.
- (c) "Goods" means all of the commodities, raw material, furniture, fixture, machinery and equipment, and/or other materials that the Supplier is required to supply to the Procuring Agency under the Contract.
- (d) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, fixations, training and initial maintenance, printing of special instructions on the label and packing, design and logo of the Procuring Agency, transportation of goods up to the desired destinations and other such obligations of the Bidder covered under the Contract.
- (e) "GCC" means the General Conditions of Contract contained in this section.
- (f) "SCC" means the Special Conditions of Contract.
- (g) "The Procuring Agency" means the Dow University of Health Sciences, Karachi.
- (h) "The Bidder" means the individual or firm supplying the goods under this Contract.
- (i) "Day" means official working day excluding national holidays.

### **2. APPLICATION**

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

### **3. TECHNICAL SPECIFICATIONS / STANDARDS**

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

#### **4. USE OF CONTRACT DOCUMENTS AND INFORMATION**

- 4.1 The Bidder shall not without the Procuring Agency's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern; sample, or information furnished by or on behalf of the Procuring Agency in connection therewith, to any person other than a person employed by the Bidder in the performance of the Contract. Disclosure to such employed person shall be made in confidence and shall extend only, as far as may be necessary, to such performance and not further or otherwise.
- 4.2 The Bidder shall permit the Procuring Agency to inspect the Bidder's accounts and records relating to the performance of the Supplies.

#### **5. PATENT RIGHTS**

- 5.1 The Bidder shall indemnify the Procuring Agency against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the country.

#### **6. ENSURING STORAGE ARRANGEMENTS**

- 6.1 To ensure storage arrangements for the intended supplies, the Bidder shall inform the Procuring Agency at least two weeks prior to the arrival of the consignments at its store/warehouse. However, in case no space is available at its store/warehouse at the time of supply, the Procuring Agency shall, seven days prior to such a situation, inform the Bidder, in writing, of the possible time-frame of availability of space by which the supplies could be made. In case the Bidder abides by the given time frame, he will not be penalized for delay.

#### **7. INSPECTIONS, TESTS & TRAINING**

- 7.1 The Procuring agency or its representative(s) shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Procuring agency. SCC and the Technical Specifications shall specify what inspections and tests the Procuring agency requires and where they are to be conducted. The Procuring agency shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.
- 7.2 The inspections and tests may be conducted on the premises of the Supplier, appoint of delivery, and/or at the Goods' final destination. If conducted on the premises of the Supplier, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Procuring agency
- 7.3 Should any inspected or tested Goods fail to conform to the Specifications, the Procuring agency may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Procuring agency.
- 7.4 The Procuring agency's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival in the Procuring agency's country shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and passed by the Procuring agency or its representative prior to the Goods' shipment from the country of origin.

- 7.5 Nothing in GCC Clause 7 shall in any way release the Supplier from any warranty or other obligations under this Contract.

## **8. DELIVERY AND DOCUMENTS**

- 8.1 The Bidder shall in accordance with the terms specified in the Schedule of Requirements make delivery of the goods. Details of documents to be furnished by the Bidder are specified in SCC.

## **9. INSURANCE**

- 9.1 The goods supplied under the Contract shall be delivered to the Procuring Agency after the payment of all taxes and customs duty, cess, octroi charges etc. Risk will be transferred to the Procuring Agency only after the delivery of these goods has been made to the Procuring Agency. Hence, payment of insurance premium, if any, shall be the responsibility of the Bidder.

## **10. TRANSPORTATION**

- 10.1 The Bidder shall arrange such transportation of the goods as is required to prevent them from damage or deterioration during transit to their final destination as indicated in the Schedule of Requirements.
- 10.2 The goods shall be supplied at the consignee's end (Dow University of Health Sciences, Sindh Infectious Diseases Hospital SIDH Campus, Karachi) as per Schedule of Requirements on the risk and cost of the Bidder. Transportation including loading/unloading of goods shall be the responsibility of Bidder.

## **11. INCIDENTAL SERVICES**

- 11.1 The Bidder will be required to provide to the Procuring Agency incidental services the cost of which should be included in the total bid price.

## **12. WARRANTY / GUARANTEE**

- 12.1 The term period of warranty / guarantee means the period of twelve **(12) months or in accordance with extended warranty period** from the date on which the Stores have been put into operation and demonstrated to the University staff. In any case this period shall not exceed six months beyond the warranty expiration period from the date of taking-over of goods.
- 12.2 During the period of warranty / guarantee, the Contractor shall remedy, at his /her expense, all defects in design, materials, and workmanship that may develop or are revealed under normal use of the goods upon receiving written notice from the University; the notice shall indicate in what respect the goods are faulty.
- 12.3 The provisions of this Clause include all the expenses that the Contractor may have to incur for delivery and installation / fixation of such replacement parts, material and equipment as are needed for satisfactory operation of the goods at the Procuring agency's premises.
- 12.4 The Procuring Agency shall promptly notify the Bidder in writing of any claims arising out of this warranty.

### **13. PAYMENT**

- 13.1 The method and conditions of payment to be made to the Bidder under this Contract are specified in SCC.

### **14. ASSIGNMENT**

- 14.1 The Bidder shall not assign, in whole or in part, its obligations to perform to another party under this Contract, except with the Procuring Agency's prior written consent.

### **15. DELAYS IN THE BIDDER'S PERFORMANCE**

- 15.1 Delivery of the goods shall be made by the Bidder in accordance with the time schedule prescribed by the Procuring Agency in the Schedule of Requirements / Contract Agreement.
- 15.2 If at any time in the course of performance of the Contract, the Bidder shall promptly notify the Procuring Agency in writing of the causes of delay and its likely duration. As soon as practicable, after receipt of the Bidder's notice, the Procuring Agency shall evaluate the situation and may, depending on merits of the situation, extend the Bidder's time for performance, with or without liquidated damages, in which case the extension shall be ratified by the Parties by a supplementary Contract to be treated as an addendum to the original contract.
- 15.3 Any undue delay by the Bidder in the performance of its delivery obligations shall render it liable to the imposition of liquidated damages.

### **16. PENALTIES LIQUIDATED DAMAGES**

- 16.1 Subject to GCC Clause 18, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Procuring agency shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in SCC. Once the maximum is reached, the Procuring agency may consider termination of the Contract pursuant to GCC Clause 17.

### **17. TERMINATION FOR DEFAULT**

- 17.1 The Procuring agency, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate this Contract in whole or in part:
- (a) if the Supplier fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by the Procuring agency pursuant to GCC Clause 15; or
  - (b) if the Supplier fails to perform any other obligation(s) under the Contract.
  - (c) if the Supplier, in the judgment of the Procuring agency has engaged incorrupt or

fraudulent practices in competing for or in executing the Contract.

For the purpose of this clause:

“Corrupt practice” means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

“fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

- 17.2 In the event the Procuring agency terminates the Contract in whole or in part, pursuant to GCC Clause 17.1, the Procuring agency may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Procuring agency for any excess costs for such similar Goods or Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

## **18. FORCE MAJEURE**

- 18.1 Notwithstanding the provisions of GCC Clauses 15, 16, and 17, the Supplier shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 18.2 For purposes of this clause, “Force Majeure” means an event beyond the control of the Supplier and not involving the Supplier’s fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the Procuring agency in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.
- 18.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Procuring agency in writing of such condition and the cause thereof. Unless otherwise directed by the Procuring agency in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

## **19. TERMINATION FOR INSOLVENCY**

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

## **20. TERMINATION FOR CONVENIENCE**

- 20.1 The Procuring agency, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Procuring agency's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.
- 20.2 The Goods that are complete and ready for shipment within thirty (30) days after the Supplier's receipt of notice of termination shall be accepted by the Procuring agency at the Contract terms and prices. For the remaining Goods, the Procuring agency may elect:
- (a) to have any portion completed and delivered at the Contract terms and prices; and/or
  - (b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Supplier.

## **21. RESOLUTION OF DISPUTES**

- 21.1 The Procuring agency and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.
- 21.2 If, after thirty (30) days from the commencement of such informal negotiations, the Procuring agency and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in SCC. These mechanisms may include, but are not restricted to, conciliation mediated by a third party, adjudication in an agreed manner and/or arbitration.

## **22. GOVERNING LANGUAGE**

- 22.1 The Contract shall be written in the language specified in SCC. Subject to GCC Clause 23, the version of the Contract written in the specified language shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

## **23. APPLICABLE LAW**

- 23.1 The Contract shall be interpreted in accordance with the laws of the Procuring agency's country (Islamic Republic of Pakistan), unless otherwise specified in SCC.

## **24. NOTICES**

- 24.1 Any notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing or by cable, telex, or facsimile and confirmed in writing to the other party's address specified in SCC.
- 24.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

## **25. TAXES AND DUTIES**

- 25.1 Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Procuring agency in case of Delivered Duty Paid (DDP) basis.

## **E: SPECIAL CONDITIONS OF CONTRACT (SCC)**

### **1. DEFINITIONS (GCC CLAUSE 1)**

GCC 1.1 (g) The Procuring Agency is the Dow University of Health Sciences, Karachi.

GCC 1.1 (h) The Bidder is: \_\_\_\_\_  
(name and address of the successful bidder)

### **2. BID SECURITY (ITB CLAUSE 13)**

ITB 13.1 The Bidder shall furnish, as part of its financial proposal/bid, refundable Bid Security in Pak Rupees @ 2.5% of the total bid value in the shape of Call Deposit, Bank Draft or a Bank Guarantee in the name of the Dow University of Health Sciences, Karachi. The financial bid found deficient of the Bid Security will be rejected. No personal cheque in lieu thereof will be acceptable at any cost. The previous Bid Security, if any, will not be considered or carried forward. However, the Bid Security of the successful Bidder will be returned upon submission of Performance Security equal to 5% of the Contract amount that will remain with the Dow University of Health Sciences, Karachi till satisfactory completion of the Contract period. After delivery and acceptance of the Goods, the performance security shall be reduced to five (5) percent of the Contract Price to cover the Supplier's warranty obligations.

### **3. TECHNICAL SPECIFICATIONS / STANDARDS (GCC CLAUSE 3)**

GCC 3.1 The technical specifications of the goods provided in these bidding document are only for widest possible competition and not for favor any single contractor or supplier nor put others at a disadvantage. However, the brand name, catalogue No. / Name etc., if any, has only been used for the reference purpose. Goods offered **“ATLEAST EQUIVALENT OR HAVING BETTER TECHNICAL SPECIFICATIONS”** shall also be considered.

### **4. INSPECTIONS AND TESTS (GCC CLAUSE 7)**

GCC 7.1, 7.2, 7.3  
7.4 & 7.5 The goods received in the Dow University of Health Services, Karachi from the Bidder will be thoroughly inspected and examined by Engineer to make sure that the goods received conform to the specifications laid down in the bid documents and which have been approved by the Procurement Committee for procurement. The Engineer will submit its inspection report, any deficiency pointed out by the Engineer shall have to be rectified by the Bidder free of cost.



## **5. DELIVERY AND DOCUMENTS (GCC CLAUSE 8)**

- GCC Clause 8.1 The Bidder shall provide the following documents at the time of delivery of goods to the Store / Warehouse of the Dow University of Health Sciences, Karachi for verification duly completed in all respects:
- i. Original copies of Delivery Note (Delivery Challan) (in duplicate) showing item's description, make, model, quantity as well as Lot Number, Batch Number, Registration Number, manufacturing and expiry dates (if applicable).
  - ii. Original copies of the Bidder's invoices (in duplicate) showing warranty, item's description, make, model as well as Lot Number, Batch Number, Registration Number, manufacturing and expiry dates (if applicable) per unit cost, and total amount.
  - iii. Original copies of the Sales Tax Invoices (where applicable) in duplicate showing item's description, quantity, per unit cost (excluding GST), as university is exempted from GST
  - iv. Manufacturer's or Bidder's warranty certificate.
  - v. Inspection certificate issued by the nominated inspection Engineer along with Bidder's factory inspection report.
  - vi. Certificate of origin.

## **6. INSURANCE (GCC CLAUSE 9)**

- GCC 9.1 The goods supplied under the Contract shall be on DDP basis at consignee's end under which risk will be transferred to the Procuring Agency only after it has taken delivery of the goods. Hence insurance coverage is Bidder's responsibility.

## **7. WARRANTY / GUARANTEE (GCC CLAUSE 12)**

- GCC 12.1 The goods shall be accompanied by manufacturer standard warranty / guarantee or 1 year or extended warranty, whichever is more.
- GCC 12.2 The Procuring Agency shall promptly notify the Bidder in writing of any claims arising out of this warranty.

## **8. PAYMENT (GCC CLAUSE 13)**

- GCC 13.1 The method and conditions of payment to be made to the Bidder under this Contract shall be as follows:
- (a) Payment shall be made in Pak Rupees.
  - (b) Secured advance against the deliveries of Solar Panels, inverters, MS Structure and cables i.e. 70% of the Purchase Price (purchase receipt should be produced) shall be paid upon delivery at site, while remaining payment after satisfactory installation,

integration and testing of the products at the Project site (s), subject to the production of installation and Operational Acceptance certificates

- (c) The payment will be made to the Bidder within 45 days of the receipt of original delivery challan(s) and invoice(s) in duplicate duly completed in all respect and signed and stamped by the Director of Works & Services. The Inspection Engineer will prepare and submit a report of physical inspection with a certificate to the effect that the goods conform to the specifications laid down in the bidding documents.

## **9. PENALTIES/ LIQUIDATED DAMAGES (GCC CLAUSE 16)**

- GCC 16.1 In case deliveries are not completed within the time frame specified in the schedule of requirements / contract, a Show Cause Notice will be served on the Bidder which will be following by cancellation of the Contract to the extent of non-delivered portion of installments. No supplies will be accepted and the amount of Performance Guarantee / Security to the extent of non- delivered portion of supplies of relevant installments will be forfeited. If the firm fails to supply the whole installments, the entire amount of Performance Guarantee/Security will be forfeited to the Government Account and the firm will be blacklisted at least for two years for future participation in bids:

The liquidated damage shall be 0.5 % per week or part thereof. The maximum amount of liquidated damages shall be 10% of the amount of contract. Once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of the contract, the Procuring Agency shall rescind the contract, without prejudice to other courses of action and remedies open to it.

## **10. RESOLUTION OF DISPUTES (GCC CLAUSE 21)**

- GCC 21.2 In the case of a dispute between the Procuring agency and the Supplier, the dispute shall be referred to the dispute resolution mechanism as defined in rule 31, 32 and 34 of the SPPRA Rules, 2010 (Amended upto date).

## **11. GOVERNING LANGUAGE (GCC CLAUSE 22)**

- GCC 22.1 The language of this Contract shall be ENGLISH.

## **12. APPLICABLE LAWS (GCC CLAUSE 23)**

- GCC 23.1 The Contract shall be governed by the Laws of Pakistan and the Courts of Karachi - Pakistan shall have exclusive jurisdiction.

## **13. NOTICES (GCC CLAUSE 24)**

***Procuring Agency's address for notice purposes:***

Director Works & Services

Dow University of Health Sciences (DMC Campus) Baba-e-Urdu Road, Beside Civil Hospital, Karachi.

Phone No. + 92-21-38771000 (Ext.5820)

***Bidder's address for notice purposes:***

Name of Bidder: \_\_\_\_\_

Name of Contact Person & Designation: \_\_\_\_\_

Phone No. \_\_\_\_\_

Fax No. \_\_\_\_\_

Mobile Phone No. \_\_\_\_\_

Email Address \_\_\_\_\_

## F: SCHEDULE OF REQUIREMENTS

The delivery schedule hereafter expressed the date of delivery required.

SR.	DESCRIPTION	QTY	REQUIRED DELIVERY SCHEDULE FROM THE DATE OF CONTRACT AWARD	LOCATION
01.	<b>SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 217 KWP SOLAR PV PLANT AT SINDH INFECTIOUS DISEASES HOSPITAL (SIDH), KARACHI.</b>	02	Delivery & Installation within 60 to 70 Days or earlier.	SIDH Campus, Karachi
	(SPECIFICATIONS OF ABOVE ITEMS ARE ATTACHED)			

**NOTE: SPECIFICATIONS OF ABOVE ITEMS ARE ATTACHED.**

## G: TECHNICAL SPECIFICATIONS

**(BIDDERS TO ENDORSE REPLY/REMARKS AGAINST EACH CLAUSE AND STAMP, SIGN EACH PAGE)**

S.No	ACTIVITY	SIDH	Vendor	REMARKS
<b>1</b>	<b>IMPORTED ITEMS :</b>			
1.1	Supply of Solar PV Panels			Mono-PERC PV Panels
1.2	Supply of Grid-Tied Inverters			Efficiency>98%
1.3	Supply of DC Surge Arrestors			Inverter built-in option
1.4	Supply of remote monitoring system (On Request, additional Cost)			Solar Info Logger
<b>2</b>	<b>FABRICATED ITEMS :</b>			
2.1	Supply of Solar PV Mounting Structure			
2.2	Supply of AC Combiner Box			Customized, Fabricated Box for Breakers.
<b>3</b>	<b>BREAKERS :</b>			
3.1	Supply of AC Breaker (Local)			Terasaki/ABB/Schneider
<b>4</b>	<b>CABLES &amp; ACCESSORIES :</b>			
4.1	Supply of DC Cables on site			Cu/XLPE/XLPE; EN-50618

4.2	DC Cables with male and female MC4 connectors			
4.3	Cable ties and cable tagging captions for DC and AC cables			
4.4	Supply of AC cable from Inverter till LV Room			Stranded cable (Only 50 Meters). If exceeds, it will be charged as per actual.
4.5	Supply of grounding cable			Stranded cable
4.6	Communication cable (enclosed in PVC pipe) with RJ45 connector on ends			
<b>5</b>	<b>MOUNTING STRUCTURE :</b>			
5.1	Supply of Mounting channel			Elevated Structure
5.2	Supply of mounting clamps			Aluminum
5.3	Supply of solar panel clamps			Aluminum
5.4	Area Clearance of location			
5.5	All tools for installation of mounting and testing			
<b>S.No</b>	<b>ACTIVITY</b>	<b>SIDH</b>	<b>Vendor</b>	<b>REMARKS</b>
<b>6</b>	<b>ENGINEERING DRAWING :</b>			
6.1	Complete Drawings and manuals of the installed system and equipment - hard copies			Panel placement & SLD will be provided after project confirmation.
6.2	Complete Drawings and manuals of the installed system and equipment - soft copies			Panel placement will be provided after project confirmation.
<b>7</b>	<b>MECHANICAL WORKS :</b>			
7.1	Supply of bare copper conductors			
<b>8</b>	<b>ELECTRICAL WORKS :</b>			
8.1	Interconnection of inverters for monitoring			
8.2	Electricity connection to site			
8.3	AC grid voltage stabilization			
8.4	Electrical studies which included Grid, load flow, transient, harmonic			Vendor will give suggestion on Solar Power termination and Genset synch for power curtailment only.
8.5	Supply of Lightning Arrester			Copper Rod with supporting mast.
<b>9</b>	<b>MISCELLANEOUS WORKS:</b>			

9.1	Utility approvals (if applicable)			
9.2	Inverter Room			
9.3	Provide shade free area for installation of PV Panels as per layout			
9.4	Location to install Inverters, AC Combiner Box & other equipment			
9.5	Regular Cleaning of PV Modules after Project handover			
9.6	Internet facility at site for monitoring			
9.7	Food for Supplier personnel at site (if remote area)			
9.8	Warehousing and Security of Supplied items till execution			
9.9	Electricity, water and sanitary facilities in site office and residential area			
9.10	Security of site and residential area			
9.11	Access to works site for execution and completion of works			

S.No	ACTIVITY	SIDH	Vendor	REMARKS
<b>10</b>	<b>CIVIL WORKS :</b>			
10.1	Construction of grounding pits			
<b>11</b>	<b>PROCUREMENT &amp; TRANSPORTATION :</b>			
11.1	Provide time of arrival, details of driver and timely delivery			
11.2	Offloading of all the equipment delivered on site			
11.3	Movement of Equipment from customer warehouse to site			
11.4	To/from site transportation for contractor's personnel (from residence area to work area and back)			
11.5	Inspection of the equipment after reaching the site			
<b>12</b>	<b>COMMISSIONING :</b>			
12.1	Testing of string, Inverter voltages,			
12.2	Pre-execution checklist and commissioning form			
12.3	Complete testing and verification of solar system			
12.4	Startup and commissioning of solar system			
12.5	Training of complete solar system to customer utility manager			
12.6	Troubleshooting in case of any faults			

## Technical Specification

The scope of this specification should cover design, engineering, manufacture, quality surveillance, testing at manufacturer's works, packing, and supply, erection testing and commissioning and performance testing of grid interactive roof top solar photovoltaic grid interactive system with associated components for installation at the roof top and operation and maintenance for ONE (01) year from date of commissioning/Completion of work in all respect.

- These systems should be complete with PV modules, PV Module String Isolation Breakers, inverter, metering, junction boxes, AC, DC distribution boards and cables, communication interface, all necessary installation material and any other equipment necessary for safe and efficient operation of the system.
- The scope of supply should also include LV Panel with appropriate Breakers and isolator switches, contractor is bound to follow vendor and component list approved **by the SIDH**
- The scope of supply should also include comprehensive insurance, storage & in transit transportation.
- The civil works for installation of complete system should also be in scope of supplier.
- The scope of work should also include operation and maintenance of the Solar Power Generation System for ONE year from the date of commissioning.
- The scope of supply should also include essential spares necessary for operation, routine maintenance and testing of equipment supplied for ONE year.
- The equipment offered should conform in all respects to high standards of engineering, design and workmanship and be capable of performing in commercial operation.
- We have authorized to interpret the meaning of drawings, specification and should have the power to reject any work or materials, which in his judgment are not in full accordance therewith.
- It should be the responsibility of the installer to ensure that all the works as per scope of the specification are completed for safe and efficient working of the system.
- All the fittings and accessories that might not have been mentioned specifically in the specification but are necessary for equipment's of the plant, should be deemed to be included in the specification and shall be supplied and furnished by the installer without any extra charge.
- The contractor will SIDH technician during the execution and maintenance period work.
- The equipment's warranty period (After Defects Liability Period) **will remain valid up to manufacturer recommended time period.**

### TECHNICAL SPECIFICATION FOR SOLAR POWER EQUIPMENT TO BE REQUIRED

2.0.0 Solar PV system should consist of following equipment:

- i. Solar Power Generation system consists of required number of PV Modules.
- ii. Efficient Grid interactive Inverters
- iii. Mounting structures
- iv. Cables and hardware
- v. Monitoring & Data Logging System
- vi. Miscellaneous Item
- vii. Junction boxes and distribution boxes
- viii. PV String/ Arrays Isolation Breakers
- ix. AC earthing Complete
- x. DC Earthing with Lightning arrestors
- xi. PVC pipes/ Cable trays and accessories
- xii. Tool kit
- xiii. Control room having LV Switch gear system and fuel savor
- xiv. Spares for ONE year

The supplied equipment must comply the below mentioned specifications:

#### 2.0.1 Panel Mounting Structure

- (i) The structure design shall be appropriate and innovative. It must follow the existing roof and steel structure profile. Whereas for ease of bidders our proposed requirement of mounting structure drawings is attached.
- (ii) The PV solar panel mounting Hot dip galvanized Structure should be fixed, mounted on concrete 1 cubic feet would be paved on each column of solar array structure above roof level.
- (iii) Bidder must submit the all the quality test documents and test certificates complying with the requirement of the structure.

#### 2.0.2 PV Module

- i. The provided PV Module should be of A-Grade Tier-1 quality i.e. no other than Jinko/Longi/JA/Canadian/Trina.
- ii. The manufacture Logo must be engraved inside the tinted glass.
- iii. The PV module(s) shall be Mono/ Bifacial N-Type Panels.
- iv. The PV module have an ability to Works well with high-voltage input Inverters/ charge controllers
- v. PV Module(s) should be provided with MC-4 Cable and Connector and IP-68 Rated.
- vi. The PV Panel must have clear anodized aluminum frame with Anti-reflection cover glass.
- vii. The power output of the module(s) under STC should be at optimum level.
- viii. The operating voltage corresponding to the power output must be mentioned.
- ix. The open circuit voltage of the PV modules under STC must be mentioned.
- x. The terminal box on the module should have a provision for opening for replacing the cable, if required and it should be waterproof
- xi. Limited performance guarantees: panel power, in standard conditions, will not be less than 90% of nominal power for first 10 years of operation and at least 80% for the second 20 years of operation with 25-year limited power warranty.
- xii. The PV Module should have at least ten-year workmanship warranty.
- xiii. The PV Module should have over twenty (20%) percent cell efficiency.
- xiv. Solar panel should have to pack for safe transportation on non-metallic roads.
- xv. The Solar Module(s) shall meet the requirement set in IEC 61215:2000, IEC61730. All the supportive valid, genuine and traceable documents must be provided. Strict action will be taken in case of fake documents.

***Note: Bidder should justify the specs with appropriate lab test reports/certifications from the principal manufacturer.***

#### 2.0.3 Power and Control Cables

Power Cables of adequate rating shall be required for interconnection of:

- Modules/panels within array
  - Array & Inverter
  - Distribution Box & Loads
- i) External cables should be specifically adapted to outdoor exposure (see IEC 60811). Especially the outer insulation must be sunlight (UV)-resistant, weatherproof. Preferably PVC/XLPE, LSZH and EPR coated cables shall be used.
  - ii) The temperature resistance of all interconnecting wires and cables should be (70- 90°) C. The minimum acceptable cross-section of the wire in each of the following sub-circuits is as in ISO IEC prescription:
  - iii) Notwithstanding the ISO /IEC requirements, all wires must be sized accordingly to keep line voltage losses to less than 3% between PV Inverter & grid/generator all of them at the maximum current conditions.
  - iv) All wiring shall be color-coded (and/ labeled for troubleshooting/manual)
  - v) All supplied wires must be in UV-resistant conduits or be firmly fastened to the building and/or support structure. Cable binders, clamps and other fixing material must also be UV-resistant, preferably made of

polyethylene.

- vi) All connections should be properly terminated, soldered and/or sealed from outdoor and indoor elements. Relevant codes and operating manuals must be followed.
- vii) Cable should pass from Pipes and Cable-ties shall be used to hold and guide the Pipes (cables/wires) from the modules to inverters or junction boxes. All the cables were aesthetically tied to module mounting structure
- viii) Brand & specs of cables must be **approved by the SIDH** before delivering on site, approved brands include **Pakistan cables, fast cables** / Equivalent.

#### 2.0.4 Grid Tied Inverter

In a grid interactive system AC power should be fed to the grid at three phase 440V AC bus. Inverter should supervise the grid condition continuously and in the event of grid failure (or) under voltage (or) over voltage, Solar System should be disconnected to share with National Grid Circuit Breaker / Auto switch provided in the inverter.

Other important Features/Protections required in the Inverter.

- xv. The grid-connected inverters shall comply with UL 1741 standard.
- xvi. Power generated from the solar system during the daytime is utilized fully by powering the all-building loads and feeding excess power to the grid as long as grid is available, in case of failure of grid the offered inverter must have the capability to synchronize with the generator power. If solar power is not sufficient due to more demand or cloud cover etc. the building loads should be served by drawing power from the grid. The inverter should always give preference to the Solar Power and will use Grid power only when the Solar Power is insufficient to meet the load requirement.
- xvii. The inverters should be net metering compliant.
- xviii. The output of the inverter must synchronize automatically its AC output to the exact AC voltage and frequency of the grid.
- xix. Inverter equipped with array ground fault detection option.
- xx. Grid voltage should also be continuously monitored and in the event of voltage going below a pre-set value and above a pre-set value, the solar system should be disconnected from the grid within the set time. Both over voltage and under voltage relays should have adjustable voltage and time settings.
- xxi. The inverter control unit should be so designed so as to operate the PV system near its Maximum Power Point (MPP), the operating point where the combined values of the current and voltage of the solar modules result in a maximum power output.
- xxii. The inverter should be a true sinewave inverter for a grid interactive PV system.
- xxiii. The degree of protection of the outdoor inverter panel should be at least IP- 68.
- xxiv. Typical technical features of the suggested inverters must mention as per following sequence.
- xxv. Continuous output power rating
- xxvi. Nominal AC output voltage and frequency
- xxvii. Accuracy of AC voltage control
- xxviii. Accuracy of frequency control
- xxix. Grid Frequency Control range
- xxx. Maximum Input DC Voltage range
- xxxi. MPPT Range DC
- xxxii. Ambient temperature
- xxxiii. Relative Humidity 0-100%
- xxxiv. Protection of Enclosure IP-65 (minimum)
- xxxv. Over Current & Over Voltage Protection
- xxxvi. Power factor control 1 (Adjustable 0.8 leading to 0.8 lagging)
- xxxvii. Inverter efficiency (minimum) plus 98%
- xxxviii. Liquid crystal display should at least be provided on the inverters front panel or on separate data logging/display device to display following
  - a. DC Input Voltage



- b. DC Input current
- c. AC Power output (kW)
- d. Current time and date
- e. Time active
- f. Time disabled
- g. Time Idle
- h. Temperatures (C)
- i. Converter status

xxxix. Following should also be displayed like Protective function limits, over voltage, AC under voltage, over frequency, under frequency, ground fault, PV starting voltage, PV stopping voltage, over voltage delay, under voltage delay over frequency, ground fault delay, PV starting delay, PV stopping delay).

xl. Nuts & bolts and the inverter enclosure should be adequately protected taking into consideration the atmosphere and weather prevailing in the area.

xli. The dimension and weight of the inverter should be indicated by the bidder in the offer.

xl.ii. All doors, covers, panels and cable exits should be gasketed or otherwise designed to limit the entry of dust and moisture. All doors should be equipped with locks.

xl.iii. Operation Mode:

- a. Night or sleep mode: where the Inverter is almost completely turned off, with just the timer and control system still in operation.
- b. Standby mode: where the control system continuously monitors the output of the solar generator until pre-set value is exceeded.
- c. Operational of MPP tracking mode: the control system continuously adjusts the voltage of the generator to optimize the power available. The power conditioner should automatically re-enter standby mode input power reduces below the standby mode threshold. Front panel should provide display of status of the inverter.

xliv. The offered inverter must comply with following standards.

UL1741, IEEE1547, , UL 1998, CE,EN 50178, EN 62109-1, EN 62109-2, EN 61000-6-2, EN 61000-6-4, EN 61000-3-11, EN 61000-3-12, FCC Part 15, NEMA3R/ NEMA 3R, DIN VDE V 0126-1-1, ENEL Guidelines (DK 5940) AS 4777, RD 1663/2000, RD 661/2007, EN 50178, IEC 62103, EN 55011, IEC 61000-3-11, IEC 61000-3-12, IEC 61000-6-3

xl. Brand & specs of inverter must be **approved by the SIDH** before delivering on site, approved brands include **Huawei/Sungrow** or Equivalent

***Note: Bidder should justify the specs with appropriate lab test reports/certifications from the principle manufacturer and Pakistani Nominated Labs.***

#### 2.0.5 Protections and Control

- i. PV system software and control system should be equipped with islanding protection as described above. In addition to disconnection from the grid (islanding protection i.e. on no supply), under and over voltage conditions, PV systems should be provided with adequate rating circuit breakers, circuit breakers on inverter input side (DC) as well as output side (AC) side for overload and short circuit protection and disconnecting switches to isolate the DC and AC system for maintenances are needed. Circuit Breakers of adequate rating should also be provided in each solar array module to protect them against short circuit.
- ii. A manual disconnect switch beside automatic disconnection to grid should also be provided at utility end to isolate the grid connection by the utility personal to carry out any maintenance.

#### 2.0.6 Integration of PV Power with Grid

The output power from Solar PV system would be fed to the On-Grid inverter and converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case of grid

failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid.

### 2.0.7 Harmonics Standard

As per the standard of IEEE 519, the permissible individual harmonics level shall be less than 3% (for both voltage and current harmonics) and Total Harmonics Distortion (THD) for both voltage and current harmonics of the system shall be less than 5%.

### 2.0.8 Miscellaneous Items for Installation

#### a. Earthing Material:

1. Earthing is essential for the protection of the equipment & manpower. Four main grounds used in the power equipment are:
  - System earth AC & DC
  - Structure earth
  - Lightning Protection System
2. System earth is earth which is used to ground one leg of the circuit. For example, in AC circuits the Neutral is earthed.
3. In case of equipment earth all the non-current carrying metal parts are bonded together and connected to earth to prevent shock to the man power & also the protection of the equipment in case of any accidental contact.
4. To prevent the damage due to lightning the one terminal of the lightning protection arrangement is also earthed. The provision for lightning & surge protection of the SPV power source is required to be made.
5. In case the SPV Array cannot be installed close to the equipment to be powered & a separate earth has been provided for SPV System, it shall be ensured that all the earths are bonded together to prevent the development of potential difference between and two earths.
6. Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earths are bonded together to make them at the same potential.
7. The Earthing conductor shall be rated for the maximum short circuit current. & shall be 1.56 times the short circuit current. The area of cross- section will be discussed and shall be **approved by the consultant** in any case.
8. The array structure of the PV modules shall be grounded properly using adequate numbers of earthing pits. All metal casing/ shielding of the plant shall be thoroughly grounded to ensure safety of the power plant.
9. Earthing will be done as per **SIDH provided specifications**.
10. Wiring:

#### b. Wiring PVC Channel Ducts

A product of good quality standard material with suitable size to be provided / used.

#### c. Flexible PVC Pipe

The flexible Conduit PVC pipe should be of good quality material with suitable size should be used.

#### d. Combiner Box

Combiner Box should be manufactured through powder coated material with 100% copper strip in it for termination of PV Arrays.

#### e. Junctions Boxes or Combiners

Dust, water and vermin proof junction boxes of adequate rating and adequate terminal facility made of fire-resistant Plastic (FRP) shall be provided for wiring.

Each solar shall be provided with Circuit breakers of adequate rating to protect the solar arrays from accidental short circuit.

**f. Civil Works**

**The following civil works should be carried out.**

- i. Laying of earthing equipment /structures and connecting to the main ground mat as per the statutory requirements.
- ii. Excavation of cable trenches etc. wherever necessary
- iii. PV Mounting Structure concrete work of ratio 1:2:4 or as mentioned in BOQ/Drawings.

**g. Meter Configuration Options**

**The metering system for On-Grid Solar Energization under net-metering arrangement will be the responsibility of the contractor.**

**2.0.9 Other Features:**

- I. The PV Module(s) should be warranted for a minimum period of 10 years from the date of supply, inverter with five years from the date of installation. The warranty card to be supplied with the system must contain the details of the system. The manufacturers can also provide additional information about the system and conditions of warranty as necessary.
- h. Adequate space should be provided behind the PV module/array for allowing unobstructed airflow for passive cooling.
- i. 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 On-Grid Inverter should be as minimum as possible).
- j. The control electronics should not be installed directly. All wiring should be in proper conduit of capping casing. Wire should not be hanging loose.
- k. Every major Component of the Plant should be suitably named/ numbered for easy traceability, identification and maintenance.
- l. Instruction and O&M manuals;
  1. Two copies of Instruction and Operation and Maintenance Manual in English and the local language should be provided with the system.
  2. The manual shall be furnished at the time of dispatch of the equipment and shall include the following aspects:
    - Precautions during unpacking
    - Instructions for handling at site.
    - Erection drawings with written assembly instructions that would enable the Purchaser to carry out erection with his own personnel if opted by him.
    - Detailed instructions and procedures for the installation operation and maintenance.
    - Pre-commissioning tests.
    - About solar PV system-its components and expected performance.
    - Clear instructions about mounting of PV module (s)
    - About electronics
    - DO's and DONT's
    - Principle of Operation of various equipment
    - Safety and reliability aspects
    - Metering scheme
    - About power conditioning units' software and controls
    - Clear instructions on regular maintenance and troubleshooting of solar power plant.
    - Name and address of the person or service center to be contacted in case of failure or complaint.
    - Outline dimension drawings showing relevant cross-sectional views, earthing details, constructional features. Rated voltages and current etc.

Technical and interconnection requirements

<b>Overall conditions of service</b>	<b>State Distribution/Supply Code</b>	<b>State Distribution/Supply Code</b>
<b>Overall Grid Standards</b>	As Per KE	As Per KE
<b>Equipment</b>	As Per KE	As Per KE
<b>Meters</b>	As Per KE	As Per KE
<b>Safety and supply</b>	As Per KE	As Per KE
<b>Harmonic Requirements Harmonic Current</b>	As Per KE	As Per KE
<b>Synchronization</b>	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Photovoltaic system must be equipped with a grid frequency synchronization device. Every time the generating station is synchronized to the electricity system. It shall not cause voltage fluctuation greater than +/- 5% at point of connection.
<b>Voltage</b>	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	The voltage- operating window should minimize nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. Beyond a clearing time of 2 second, the photovoltaic system must isolate itself from the grid.
<b>Flicker</b>	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Operation of Photovoltaic system should not cause
<b>Frequency</b>	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side), There should be over and under frequency trip functions with a clearing time of 0.2 seconds.

<b>DC injection</b>	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Photovoltaic system should not inject DC power more than 0.5% of full rated output at the interconnection point or 1% of rated inverter output current into distribution system under any operating conditions.
<b>Power Factor</b>	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	The photovoltaic system in the event of fault, voltage or frequency variations must island/disconnect itself within IEC standard on stipulated period.
<b>Overload and Overheat</b>	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored.
<b>Paralleling Device</b>	IEEE 519 CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations 2013	Paralleling device of photovoltaic system shall be capable of withstanding 220% of the normal voltage at the interconnection point.

Note:

Any minor equipment and material may not be specifically mentioned in this specifications/BOQ or in drawings but are required to make the system complete in every respect in accordance with technical specification shall be deemed to have been covered under the scope of this specification and shall be provided by the tenderer/supplier within the quoted items rate.

**NOTE:**

- i. Bidder will submit the sample / partial sample, according to the nature of the ordered for the approval, prior to supply of the entire quantities.*

## G: SAMPLE FORMS

## 1. PERFORMANCE GUARANTEE/SECURITY FORM

To: [Name & Address of the Procuring Agency]

Whereas \_\_\_\_\_ **[Name of Bidder]** \_\_\_\_\_ (hereinafter called "the Bidder") has undertaken, in pursuance of Contract No. **[number]** dated **[date]** to supply **[description of goods]** (hereinafter called "the Contract").

And whereas it has been stipulated in the said Contract that the Bidder shall furnish to the Procuring Agency with a Bank Guarantee by a scheduled bank for the sum of **5%** of the total Contract amount as Security for compliance with the Bidder's performance obligations in accordance with the Contract.

And whereas we have agreed to provide a Guarantee: for the said Bidder

Therefore, we hereby unconditionally and irrevocably guarantee, on behalf of the Bidder, up to a total of \_\_\_\_\_  
**[Amount of the Guarantee in Words and Figures]**\_\_\_\_\_and \_\_\_\_\_we  
undertake to pay you, upon your first written demand declaring the Bidder to be in default under the Contract  
andwithout requiring the Procuring Agency to initiate action against the Bidder and without cavil or argument  
any sum or sums within the limits of **[Amount of Guarantee]** as aforesaid. The amount stated in the demand  
made under this guarantee shall be conclusive proof of the amount payable by the Guarantor under this  
guarantee.

The obligations of the Guarantor under this guarantee shall be valid for four months after the completion of delivery of supplies by the Bidder to the Procuring Agency of the full quantity of the goods for which this Guarantee is being given, and until all and any obligations and sums due have been paid in full.

Signature and Seal of the Guarantors / Bank Address

Date \_\_\_\_\_

## 2. MANUFACTURER'S AUTHORIZATION FORM

[SEE CLAUSE 11.1 (a) OF THE INSTRUCTION TO BIDDERS]

Dated: \_\_\_\_\_

To: The Dow University of Health Sciences Karachi.

WHEREAS                     [name of the Manufacturer]                     who are established and reputable Manufacturers of                     [name and /or description of the goods]                     having factories at                     [address of factory]                     do hereby authorize                     [name and address of Bidder / Agent]                     to submit a bid, and subsequently follow- up / negotiate and sign the Contract with you against Invitation for Bids (IFB) / Tender Notice for the goods manufactured, by us, under the patent name of \_\_\_\_\_  
\_\_\_\_\_ for performance of the contract.

We hereby commit and assure our full guarantee and warranty / guarantee as per Clause 12 of the General Conditions of Contract for the goods offered for supply by the above mentioned firm against this Invitation for Bids.

\_\_\_\_\_  
[Signature for and on behalf of Manufacturer]

[Name and Designation]

Note:

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

### 3. CONTRACT AGREEMENT FORM

THIS AGREEMENT made the \_\_\_\_\_ day of \_\_\_\_ 2025 between *Dow University of Health Sciences, Karachi* of *Islamic Republic of Pakistan* (hereinafter called “the Procuring Agency”) of the one part and *[Name of Bidder]* of \_\_\_\_\_  
*[city and country of Bidder]* (hereinafter called “the Bidder”) of the other part:

WHEREAS the Procuring Agency invited bids for certain goods and ancillary services, viz., *[brief description of goods and services]* and has accepted a bid by the Bidder for the supply of those goods and services in the sum of \_\_\_\_\_ *[contract price in words and figures]* (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
  - (a) the Bid Form and the Price Schedule submitted by the Bidder;
  - (b) the Schedule of Requirements;
  - (c) the Technical Specifications;
  - (d) the General Conditions of Contract;
  - (e) the Special Conditions of Contract;
  - (f) the Procuring Agency’s Notification of Award; and
  - (g) Complete bidding documents.

2. In consideration of the payments to be made by the Procuring Agency to the Bidder as hereinafter mentioned, the Bidder hereby covenants with the Procuring Agency to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract

4. The Procuring Agency hereby covenants to pay the Bidder in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

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

\_\_\_\_\_  
Signed / Sealed by the Manufacturer /  
Authorized Bidder / Authorized Agent

\_\_\_\_\_  
Signed / Sealed by Procuring Agency



#### **4. INTEGRITY PACT (AFFIDAVIT)**

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

M/s. \_\_\_\_\_, the service provider hereby  
declared that:

- (a) Its intention not to obtain the procurement / services / work of any contract, right, interest, privilege, or other obligation or benefit from the DUHS or any administrative or financial offices thereof or any other department under the control of the DUHS through any corrupt practice(s).
- (b) Without limiting the generality of the forgoing the bidder / company / firm / agency represents and warrants that it has fully declared the charges, fees, commission, taxes, levies etc, paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within the DUHS directly or indirectly through any means any commission, gratification, bribe, gifts, kickback whether described as consultation fee or otherwise, with the object of obtaining or including the procurement or service contract or order or other obligations whatsoever from the DUHS, except that which has been expressly declared pursuant hereto.
- (c) The bidder / company / firm / agency / accepts full responsibility and strict liability for making any false declaration / statement, not making full disclosure, misrepresenting facts or taking any action likely to degrade the purpose of declaration, representation and warranty. It agrees that any contract / order obtained aforesaid shall without prejudice to any other right & remedies available to the DUHS under any law, contract, or other instrument, be stand void at the discretion of the DUHS.
- (d) Notwithstanding any right and remedies exercised by the DUHS in this regard, bidder / company / firm / agency agrees to indemnify the DUHS for any loss or damage incurred by it on account of its corrupt business practice & further pay compensation to the DUHS in any amount equivalent to the loss of any commission, gratification, bribe, gifts, kickback given by the bidder / company / firm / supplier / agency / service provider as aforesaid for the purpose of obtaining or inducing procurement / work / service or other obligation or benefit in whatsoever from the DUHS.

Dow University of Health Sciences  
Signature & Seal

(Name of Security Firm)  
Signature & Seal

**Note:** This integrity pact is mandatory requirement other than auxiliary services / works.

## H: BID FORM & PRICE SCHEDULE

### 1. BID FORM

To: The Dow University of Health Sciences Karachi

Dear Sir,

Having examined the Bidding Documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver the goods specified in the said Bidding

Documents for the sum of                     **[Total Bid Amount Rs.]**  
**Amount in words** \_\_\_\_\_

or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this bid.

2. The free of cost / donation / discounts offered and the methodology for their application are: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. We undertake, if our bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

4. If our bid is accepted, we shall obtain an unconditional guarantee of a bank in the sum of 5% of the Contract Price for the due performance of the Contract, in the form prescribed by the Procuring Agency.

5. We agree to the validity of this bid for 90 days from the date fixed for financial bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

6. Until a formal Contract is prepared and executed, this bid, together with the written acceptance thereof and notification of award, by the Procuring Agency, shall constitute a binding Contract between us.

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

Name \_\_\_\_\_

In the capacity of \_\_\_\_\_

Signed \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of \_\_\_\_\_

Date \_\_\_\_\_

**2. PRICE SCHEDULE IN PAK RUPEES DELIVERED DUTY PAID (DDP BASIS)**  
**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 217 KWP SOLAR PV PLANT AT**  
**SINDH INFECTIOUS DISEASES HOSPITAL (SIDH), KARACHI.**

**NIT No. DIR(W&S-DUHS-SIDH&RC)/NIT-2025-26/1557, Dated: August 12, 2025**

**(REF NO: DIR(W&S-DUHS/SIDH&RC)-NIT-08)**

**FOR GOODS OFFERED WITHIN THE PROCURING AGENCY'S COUNTRY**

**PRICE SCHEDULE – SUPPLIES**

**(SIDH CAMPUS)**

Name of Bidder: \_\_\_\_\_

**BOQ- ROOF MOUNTED SOLAR PV SYSTEM ESTIMATED CAPACITY\_217 kWp**

<b>Sr No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Price (PKR)</b>	<b>Total Amount (PKR)</b>
<b>1</b>	<b>MODULE MOUNTING STRUCTURE</b>				
<b>i)</b>	Designing, Supplying, Fabrication & Installation of Elevated Mounting structure Hot Dip Galvanized Iron (HDGI). The mounting structures must be designed structurally to be suitable to withstand all static loads (weight of modules, wind loads etc). Minimum wind speed pressure 35m/s in harsh environment. The design submission must be as per ASTM-A36, ASTM-123 and ASCE 7-10. The mounting structure components are bonded together to guaranty potential equalization. The tilt angle shall be optimum as per site requirement. The work is to be carried out strictly as per approved structure drawings, design and specification and the rate quoted is inclusive of the following:	Watt	217,000		
<b>a</b>	<b>Designing of the structure as per specification and approved by SIDH Engineer:</b> <ul style="list-style-type: none"> <li>• Column/Pole Size: 4" x 4" in 12 gauge. Columns may be circular or square shape.</li> <li>• Base Plate Size: 10" x 10" with 10mm thickness.</li> <li>• Height structure will be 15 ft</li> <li>• Top Plate Dimension: 6" x 6" with 6mm thickness.</li> <li>• Bracing Angles: in 12 gauges.</li> <li>• Sharing Girder: Sharing of Girder not allowed in structure design.</li> <li>• Tilt Angle: Must be optimal for energy generation.</li> <li>• Cleaning Space: Adequate cleaning space must be incorporated.</li> <li>• Material: Hot Dip Galvanized (HDGI).</li> <li>• Civil Pads: Civil concrete pads sizes shall be L x W x H (1' x 1' x 1')</li> <li>• Gauges: All gauges will be assessed before galvanization.</li> <li>• Fasteners: All Allen bolts, Spring Washer, Nuts, Washer &amp; Plate Washer must be SS304.</li> <li>• Cleaning Platform: MS Moveable cleaning ladder in 14gauge with proper cleaning platform of checker plate with epoxy paint.</li> <li>• Galvanization Coating Thickness: 100 to 120 microns for durability.</li> <li>• Mounting Accessories: Includes brackets, clamps, and bolts</li> </ul>				
<b>b</b>	Structure Drawing must be submitted prior supply and installation and approved by SIDH Engineer				
<b>c</b>	Placing of Anchor Bolts & Base Plate as per design & length & Details approved by SIDH Engineer.				
<b>d</b>	The Contractor shall remove all the debris and clear the site as per direction				

e	The Contractor shall submit the detail technical shop drawing before execution of work.				
f	After completion of the work the contractor shall submit the as built drawing.				
g	Minimum warranty period for structure 10 years				
2	<b>PV MODULES-217 KWp:</b>				
i	<p>Supply, Installation, Testing &amp; Commissioning (SITC) N-type Bifacial Photovoltaic Solar Modules Tier 1 Type anti-reflective high transparency low iron tempered glass, with earthing provision. The modules STC parameters must be as under</p> <p>(a) Min Power Pmax 620 or above Wp rated power</p> <p>(b) Junction Box Protection Degree, IP 68</p> <p>(c) Connection box, 4.0mm<sup>2</sup> conductor cross section,</p> <p>(d) Cable with, MC4 male and female connectors,</p> <p>(e) Anodized Aluminium Frame and Support Bars</p> <p>(f) PVC duct, Clamps &amp; Accessories, support and labels to be installed under PV Array. The Contractor shall provide manufacturer warranty for solar panel for a period not less than 25 years.</p> <p>Contractor must submit all the required certificates for each PV solar panel from manufacturer as per specification with complete import documents, standard laboratory test certificates.</p> <p>All works and materials must be according to the drawings, specifications and supervisor engineer instruction's and approval.</p> <p><b>Make: Jinko or Longi HI-MO X10 or Equivalent</b></p>	No. of Panels	355		
3	<b>GRID-TIED INVERTER (PCU)</b>				
i)	<p>Supply, Installation, Testing &amp; Commissioning (SITC) DC/AC grid tie 3-phase inverter with data communication unit with Ethernet connection. The inverter with must be suited to any PV module configuration, and depending on the system design and installation proposed and for the future extended also. (Leading Market brand, having annual production greater than 1GW). The DC max power input rating should be at least 1.2 times of AC power at standard test condition (STC). The inverter unit shall be suitable for indoor and outdoor installations with IP65. The inverter must include the safety concepts such as (triple protection with Opti protect, electronic strings fuses, self-learning string failure detection, DC surge arrestor type (2) to ensure max availability. The inverter includes online monitoring with wife Dongle. All works and materials must be according to the drawings, specifications and supervisor Engineer instructions and approval.</p> <p><b>Make: Sungrow/Huawei/SMA or equivalent Power Rating: 125KW.</b></p>	No	2		
	<b>Brief specification is as under:</b>				
a	Max Input DC Voltage: 1100V				
b	MPPT Operating Voltage Range : 200V~1000V,				
c	Min 10 Independent MPPT Trackers				
d	Minimum Efficiency 98.0%,				
e	Warranty : 10 Years				
f	Minimum IP rating should be IP65				
4	<b>INVERTER STAND</b>				

1	Supplies, Rigging and Installation of 04-Inverters Stands with (front and back combination of rigging; i.e, two inverter on single stand) complete nut bolts / anchor bolts as required as per provided drawings. Chemical anchoring used if required (Make: GMSA/HILTI/FISCHER). Civil pad is also consider if required. Load Bearing capacity of 400kg.	Job	1		
5	<b>COMBINER BOXES</b>				
a	<b>DC COMBINER BOX</b>				
i)	Supply, Installation, Testing & Commissioning (SITC) of DC box/Array Junction Box with all accessories for outdoor usage, proper cable glands as per cable size. DC Combiner Box shall be provided One DC Breaker 4Pole per string. DC Breaker 4Pole 25A/32A,1000VDC, Qty=40 <b>DC Breaker Brand:</b> <b>Make: ABB/Schneider/Chint or Equivalent</b>	Each	2		
6	<b>AC COMBINER BOX (LV PANEL)</b>				
i)	Supply, Installation, Testing & Commissioning (SITC) of AC Combiner Box (LV Panel) with pad floor standing/Wall mounted, Locally fabricated in 16 gauge, Colour Code: RAL7035, MS Powder Coated, Copper Glands, and Lugs, Phase indication lights, Tin Coated Copper Bulbar for 3 Phases with colour coded heat shrinkable sleeves, Neutral & Earth with Polycarbonate cover sheet. Brass glands at bottom In & Out, CT's, Energy meter with all related accessories for outdoor usage minimum IP Rating 54 With dust proof enclosure. MCCB Breaker 250A,4P, 36KA, Qty:03, MCCB Breaker 150A adj., 4P, 36kA, Qty: 01 ACB Breaker 1000A adj,4P, 65kA, Qty:01 AC SPD 4Pole, 65kA with HRC Fuses with bases <b>Energy Analyzer:</b> <b>Make: Janitza or Equivalent</b> <b>CT's:</b> <b>Make: Ficco/Saci or Equivalent</b> <b>Brand of ACB &amp; MCCB</b> <b>Make: ABB/Schneider or Equivalent</b> <b>SPD</b> <b>Make: ABB/Schneider or Equivalent</b> <b>HRC Fuses</b> <b>Make: Schnieder/ABB or Equivalent</b>	Each	1		
ii)	<b>LV Panel :</b> Specification: Supply, Installation, Testing & Commissioning (SITC) of AC Combiner Box (LV Panel) with pad floor standing/Wall mounted, Locally fabricated in 16 gauge, Colour Code: RAL7035, MS Powder Coated, Copper Glands, and Lugs, Phase indication lights, Tin Coated Copper Bulbar for 3 Phases with colour coded heat shrinkable sleeves, Neutral & Earth with Polycarbonate cover sheet. Brass glands at bottom In & Out, CT's, Energy meter with all related accessories for outdoor usage minimum IP Rating 54 With dust proof enclosure. ACB Breaker 1000A adj,4P,MCCB,400V/415V, Qty:01 AC SPD 4Pole, 65kA with HRC Fuses Energy Meter: Janitza or Equivalent CT's: Ficco/Saci or Equivalent MCCB Make: ABB/Schneider or Equivalent SPD Make: ABB/Schneider or Equivalent HRC Fuses Make: Schnieder/ABB/Voltron or Equivalent <b>Note: Coupling of Solar LV Panel with existing LV panel in substation through same rating of bus bar as existing panel</b>	Each	1		

7	<b>CABLES</b>				
a	<b>DC CABLES</b>				
	<p>Supply, Installation &amp; Testing of DC Cable, 1 Core 6 sq.mm Cu/XLPO/XLPO cable complete in all respect with accessories to connect the PV solar cells together and to the inverter directly to have a complete operational circuit, clamps, trays and cable end terminations which shall be DC plug and socket connectors. The allowable voltage drop for DC cables between PV Arrays and inverter should be less than 2%. Minimum voltage capacity 1500VDC, Highest permissible voltage conductor/conductor should be 1.5kV DC, Standard Double insulated: Cross link polyolefin, Tinned copper conductor:</p> <p>Cable should be Certified from TUV Approved. Standard: EN50618</p> <p>Tagging and other accessories must be complete in all aspects</p> <p><b>Make: Pakistan Cable/Fast Cable or Equivalent as Engineer Approved.</b></p>	Meter	3,800		
b	<b>AC Cables</b>				
	<p>Supply, Installation &amp; Testing of the AC power cables &amp; Grounding Cables with all required works in different sizes of ducts/pipes, Cable lugs, Clamps and all needed fittings to connect cables terminals from source to destination. According to drawings, specifications, instructions, and demand of the supervising engineer as follow:</p> <p><b>Brand: Pakistan Cable/Fast Cable or Equivalent as Engineer Approved.</b></p>				
i)	4C x 95 sq.mm , 0.6/1kV Cu / XLPE / /PVC Pure Copper with lugs, brass glands, tagging and other accessories (Inverters to AC Combiner). Must be complete in all aspects.	Meter	540		
ii)	2x4C x 240 sq.mm ,0.6/1kV Cu/XLPE/PVC Pure Copper with lugs, brass glands, tagging and other accessories (Inverters to AC Combiner). Must be complete in all aspects.	Meter	300		
c	<b>Grounding Cables</b>				
i)	Grounding Cable Laying and termination - 1C - 2.5 Sq.mm 450/750 V Cu/PVC with lugs, glands, tagging and other accessories (Panel to Panel Earthing) must be complete in all aspects.	Meter	600		
ii)	Grounding Cable Laying and termination - 1C - 10 Sq.mm 450/750 V Cu/PVC with lugs, glands, tagging and other accessories (Table to Table) must be complete in all aspects.	Meter	450		
iii)	Grounding Cable Laying and termination - 1C - 25 Sq.mm 450/750 V Cu/PVC with lugs, glands, tagging and other accessories required (Inverters to Sub Combiner and Sub Combiner to Main Combiner - Main Combiner to Earthing Pit) must be complete in all aspects	Meter	250		
8	<b>CONNECTORS</b>				
	Supply & Installation of MC4 Connectors Fuse Based, with accessories as required (Sample shall be provided before installation) 1500Volts				
a)	MC 4 Connector - For Strings - Imported Amphenol / BlueSunS Solar / Equivalent	Pairs	30		
b)	MC 4 Connector - For Looping - Imported Amphenol / BlueSun Solar / Equivalent ( Looping)	Pairs	10		
9	<b>EARTHING SYSTEM</b>				

i)	Grounding Pits (less than 1 ohm required), Electrode type having bore depth 120 ft to 150 ft, 6 inch bore or to achieved less than 1 ohm with complete accessories including manholes and UPVC schedule 40 conduits.Task must complete in all aspect. <b>Note: Copper purity shall be 99.99%, certificates might be required</b>	Job	4		
a)	Supply & Installation of Copper Rod 25mm diameter, length: 10 Ft (Local) with complete accessories; Copper purity shall be 99.99%, certificates might be required.	Nos	4		
b)	Supply & Installation of Earthing powder <b>Make: Bentonite Chemical</b> , vendor needs to get approval for chemical bags first. Need to show the pictures of the bags for approval	Job	1		
c)	Supply & Installation of bare Copper Rope 2 x 70 sq.mm (From pit to test point).	Mtr	290		
d)	Supply & Installation of UPVC Schedule=40 Pipe dia 6" with complete accessories <b>Make: (Jeddah / Adamjee/equivalent etc). (For Casing)</b>	Mtr	220		
e)	Supply & Installation of main hole with cover (concrete box of 1' x 1' x 6" inches), cover would be of chequered sheet should be of iron material (thickness of 6mm) that can with sand heavy loads	Nos	4		
f)	Supply & Installation of busbar 250mm x 25mm x 5mm with box with complete accessories and MS box (Powder coated)	Nos	4		
g)	Supply & Installation of Accessories (SS304 Nut and bolts, MS Anchor Bolt Electroplated M12 x 120mm).	Job	1		
10	<b>LIGHTNING ARRESTER</b>				
a	Supply & Installation of Lightning arrester (ESE SIRIUS) at 5 meter Height with all the accessories.	Nos	2		
b	Supply & Installation of Bare Copper Conductor 1C x 25 sq.mm (From Lightning Arrester to test point).	Mtr	180		
c	Supply & Installation of Base plate 100mm x 100mm x 6mm (Local MS with epoxy paint).	Nos	2		
d	Supply & Installation of Pole (Local MS with epoxy paint).				
I	3" Dia 12 Gauge 2.1 m Height	Nos	2		
II	4" Dia 12 Gauge 2 m Height	Nos	2		
11	<b>DATA LOGGER REMOTE MONITORING SYSTEM</b>				
i)	Supply, installation, testing and commission of data Manager with Remote Monitoring System consists of the following parameter: a) Total energy generation of PV Plant b) Instantaneous Power been generated by solar PV plant c) Performance ratio of PV plant d) Current load of client e) Load profile v/s energy generation. f) Daily Solar Plant report in PDF from Data should be store on server for not more than 10 min time interval. Data must be access through internet via user friendly GUI.	Each	1		
12	<b>CABLE TRAY</b>				
i)	Supply and installation of following sizes 14SWG heavy duty HDGI Perforated Cable Tray 75mm x 75mm with 14 SWG HDGI. Complete with all installation material such as angle iron support of size, MS round bar, elbows, Tee, Nuts, Bolts, Washer, Hilti drop-in anchor, etc. Complete in all respect, as per the specification.	Meter	200		

ii)	Supply and installation of following sizes 14SWG heavy duty HDGI Perforated Cable Tray 100mm x 100mm with 14 SWG HDGI. Complete with all installation material such as angle iron support of size, MS round bar, elbows, Tee, Nuts, Bolts, Washer, Hilti drop-in anchor, etc. Complete in all respect, as per the specification.	Meter	125		
iii)	Supply and installation of following sizes 14SWG heavy duty HDGI Cable Tray 200mm x 100mm with 14 SWG HDGI. Complete with all installation material such as angle iron support of size, MS round bar, elbows, Tee, Nuts, Bolts, Washer, Hilti drop-in anchor, etc. Complete in all respect, as per the specification.	Meter	100		
13	<b>UPVC PIPES</b>				
i)	Supply and installation of 3 inch UPVC pipe for branch connection to main cable tray with other accessories including Elbow, reducers, bands, T- bands, dressing cable ties etc must be complete in all aspects. <b>(For Branches of DC Cables) Elevated Structure</b>	Meter	300		
ii)	Supply and installation of 2 inch UPVC pipe for branch connection to main cable tray with other accessories including Elbow, reducers, bands, T- bands, dressing cable ties etc must be complete in all aspects. <b>(For Branches of DC Cables) Elevated Structure</b>	Meter	150		
14	<b>NET METERING/ GEN SET CONTROLLER (Option (i)/ Option (ii))</b>				
i)	Service of Net metering application process & handling as per K.E approved criteria complete in all respects or directed by Engineer. This also includes the services charges & fee for assessment of Grid load flow study if it required & service charges for Load Inspector etc. Only the cost of green meter shall be paid by SIDH	Job	1		
	<b>Option (ii)</b>				
i)	Design, Supply, Installation, testing and commissioning of Deif / Encombi or Equivalent Fuel Saver Controller System Solution for the Integration of PV Power Plant into Electrical Network based on Gensets. Fuel Save controller should performs the following tasks: a) Monitoring of the genset's power and operating status b) Monitoring of the load and grid status c) Calculation of suitable values for the maximum power output of the PV inverters according to defined parameter settings and the current status of gensets and load d) Control and communication interface to PV inverters e) Internal logging of all relevant system data f) Provision of relevant system data for local and remote monitoring g) Emergency shutdown of the PV inverters in case of a system malfunction h) Online Dashboard access to monitor solar power plant, Gensets & Grid and daily plant report in excel file. The bidder shall provide the complete technical details of the system				
16	<b>ACCESSORIES &amp; Civil Work</b>				
i)	Accessories & Any Civil Work related to above scope (Cable Ties (UV resistant (make: KSS), Lugs, Taggings, Brass Glands, GI Flexible Pipes, Polymer Flexible Pipes etc) must be installed as per site requirements and complete in all aspects.	Job	1		
				<b>Grand Total</b>	
				<b>Per Watt</b>	

**Note:**

1. In case of discrepancy between unit price in figure and words and total price mentioned in words shall prevail.
2. DG set price should be in CNF / CFR, local items will be quoted in PKR (DDP).



**PRICE SCHEDULE - SERVICES**

Name of Bidder :

**A. Price Schedule of Solar PV Systems:**

**SUMMARY OF BID PRICES**

Item No.	Description	Unit/ Qty.	AMOUNT (PKR)
(A)	Supply, Testing & Commissioning of 217 kWp Roof Mounted Grid Tied Utility Interactive Photo Voltaic Solar Power System	1 Lot	
(B)	Installation of 217 kWp Roof Mounted Grid Tied Utility Interactive Photo Voltaic Solar Power System	1 Job	
(C)	Transportation	1 Job	
(D)	Net Metering	1 Job	
	<b>TOTAL AMOUNT OF THE PROJECT WITH OUT TAX</b>		
	<b>TOTAL AMOUNT OF THE PROJECT WITH TAX (SRB)</b>		
	<b>GRAND TOTAL AMOUNT OF THE PROJECT PER WATT WITH TAX</b>		

**SIGNATURE OF BIDDER**

Note:

- (i) In case of discrepancy between unit price in figure and words and total price mentioned in words shall prevail.
- (ii) DG set price should be in CNF / CFR, local items will be quoted in PKR (DDP).

\_\_\_\_\_  
Name \_\_\_\_\_

In the capacity of \_\_\_\_\_

Signed \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of \_\_\_\_\_

Date \_\_\_\_\_

**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 217 KWP SOLAR PV PLANT  
AT SINDH INFECTIOUS DISEASES HOSPITAL (SIDH), KARACHI.**

**(REF NO: DIR(W&S-DUHS/SIDH&RC)-NIT-08)**

**EXPERIENCE OF SIMILAR SUPPLY AND INSTALLATION**

**DURING LAST 3 YEARS**

<b>Sr. No</b>	<b>Assignment Description</b>	<b>Name / Contact Details of Client</b>	<b>Cost</b>	<b>Start Date</b>	<b>End Date</b>	<b>Remarks</b>
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Name \_\_\_\_\_

In the capacity of \_\_\_\_\_

Signed \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of \_\_\_\_\_

Date \_\_\_\_\_

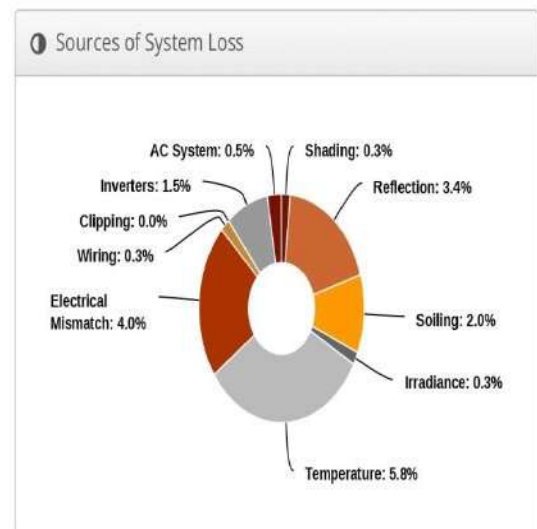
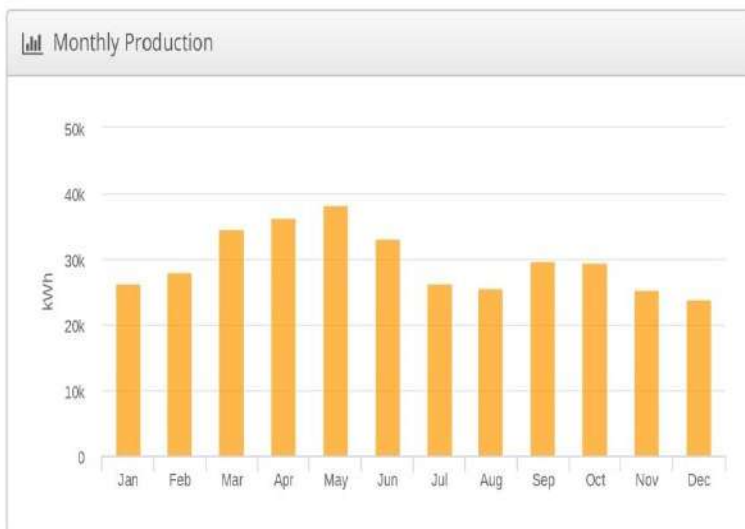
## I) DRAWINGS

### Structure Drawing and Panel Layout

## Design 1 SIDH Proposal, Sindh Infectious Diseases Hospital

Report	
Project Name	SIDH Proposal
Project Address	Sindh Infectious Diseases Hospital
Prepared For	DOW University of Health & Sciences
Prepared By	Paras Ali

System Metrics	
Design	Design 1
Module DC Nameplate	217.0 kW
Inverter AC Nameplate	200.0 kW Load Ratio: 1.09
Annual Production	357.2 MWh
Performance Ratio	83.3%
kWh/kWp	1,646.0
Weather Dataset	TMY, 10km Grid, Meteonorm 8 (meteonorm_v8)
Simulator Version	f0ef648f45-d939c45ea4-b552ac6641-11a55476a6



⚡ Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,924.7	
	POA Irradiance	1,976.6	2.7%
	Shaded Irradiance	1,970.5	-0.3%
	Irradiance after Reflection	1,904.5	-3.4%
	Irradiance after Soiling	1,866.4	-2.0%
	Total Collector Irradiance	1,866.5	0.0%
Energy (kWh)	Nameplate	405,431.0	
	Output at Irradiance Levels	404,116.8	-0.3%
	Output at Cell Temperature Derate	380,722.5	-5.8%
	Output after Electrical Mismatch	365,628.4	-4.0%
	Optimal DC Output	364,433.9	-0.3%
	Constrained DC Output	364,433.3	0.0%
	Inverter Output	358,966.8	-1.5%
	Energy to Grid	357,172.0	-0.5%
Temperature Metrics			
Avg. Operating Ambient Temp		29.1 °C	
Avg. Operating Cell Temp		38.6 °C	
Simulation Metrics			
Operating Hours		4623	
Solved Hours		4623	

🏠 Condition Set													
Description	Condition Set 1												
Weather Dataset	TMY, 10km Grid, Meteonorm 8 (meteonorm_v8)												
Solar Angle Location	Meteo Lat/Lng												
Transposition Model	Perez Model												
Temperature Model	Sandia Model												
Temperature Model Parameters	Rack Type		a		b		Temperature Delta						
	Fixed Tilt		-3.56		-0.075		3°C						
	Flush Mount		-2.81		-0.0455		0°C						
	East-West		-3.56		-0.075		3°C						
	Carport		-3.56		-0.075		3°C						
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D	
	2	2	2	2	2	2	2	2	2	2	2	2	
Irradiation Variance	5%												
Cell Temperature Spread	4° C												
Module Binning Range	-2.5% to 2.5%												
AC System Derate	0.50%												
Module & Component Characterizations	Type	Component						Characterization					
	Module	TSM-NEG19RC.20 620 (Trina Solar)						Spec Sheet Characterization, PAN					
	Inverter	SG100CX (Sungrow)						Spec Sheet					

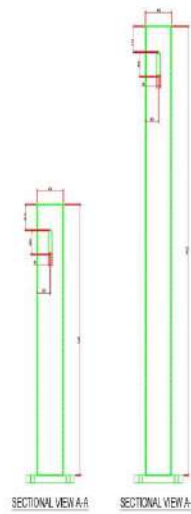
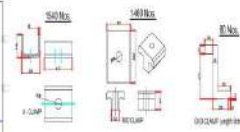
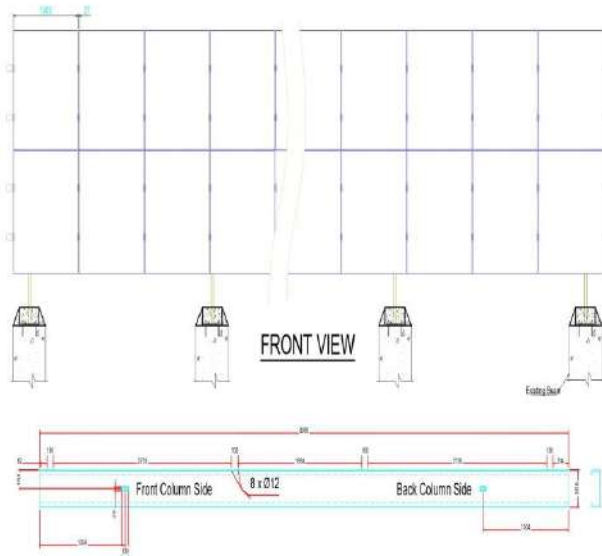
Components		
Component Name		Count
Inverters	SG100CX (Sungrow)	2 (200.0 kW)
Strings	10 AWG (Copper)	20 (549.7 m)
Module	Trina Solar, TSM-NEG19RC.20 620 (620W)	350 (217.0 kW)

Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	6-19	Along Racking

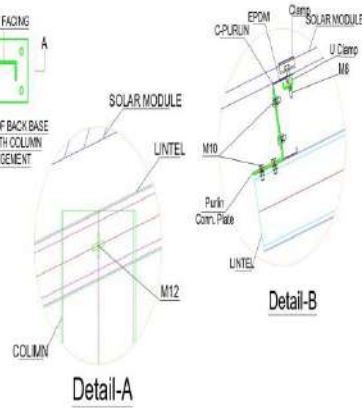
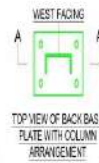
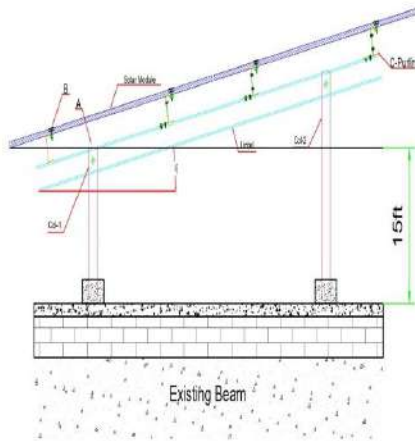
Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Roof 2	Carport	Landscape (Horizontal)	10°	140°	0.1 m	2x1	33	66	40.9 kW
Roof 1	Carport	Portrait (Vertical)	5°	230°	0.2 m	2x1	142	284	176.1 kW







DESIGN DATA		ARRAY INFORMATION	
CODE	ACEL-T-19	MODULE CAPACITY (kW)	100
WIND EXPOSURE CATEGORY	C	TILT ANGLE (DEGREE)	10°
DESIGN WIND SPEED (mm)	15	DIMENSION (mm)	2300x1200x120
MODULE DEADLOAD (psf)	1	INTERNAL	(100)
TOTAL NUMBER OF PANELS	---	NO. OF STRUCTURES	---



Rev No.	Date	Description	DATE	PROJECT NO.
1			JUNE 2025	
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# DAWN

Friday  
August 15, 2025  
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KARACHI  
Rs 35.00  
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No. DIR(W&S-DUHS-SIDH&RC)/NIT-2025-26/1557

Dated: August 12, 2025

## TENDER NOTICE

**SINDH INFECTIOUS DISEASES HOSPITAL & RESEARCH CENTER AT NIPA, KARACHI (SIDH&RC)** invites e-bids through E-Pak Acquisition & Disposable System (EPADS) from well-reputed Companies / Bidders / firms having registration with Federal Board of Revenue (FBR), Income Tax Department, Sindh Revenue Service Board & Sales Tax.

S. No	NAME OF WORK	METHOD OF PROCUREMENT
1.	SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF 217 KWP SOLAR PV PLANT AT SIDH&RC. REF No. DIR(W&S-DUHS/SIDH&RC)-NIT-08.	Single Stage – Two Envelope Procedure as per rule 46 sub rule-2 of SPP Rules 2010 (Amended upto date)

<b>Tender Fee</b>	Rs. 5,000/- (Rupees Five Thousand Only) Non-Refundable in shape of Pay Order / Demand Draft in favor of Dow University of Health Sciences, Karachi.
<b>Security</b>	Bid Security and Performance Security as mentioned in the bidding document.

E-Bidding documents as per detailed terms and conditions, specifications and requirements are available for the registered bidders on Sindh Public Procurement Regulatory Authority's EPADS at <https://portalsindh.eprocure.gov.pk/#/> and University website <https://duhs.edu.pk> on the payment noted above (non-refundable) on any working day except the day of opening of tenders.

The electronics bids must be submitted using EPADS before closing time 01-09-2025 at 10:00 Hrs. Manual bids, shall not be accepted. Electronic Bids will be opened on 01-09-2025 at 11:30 Hrs. The tender fee (non-refundable) and earnest money of total bid (refundable) in the form of a Pay Order or Demand Draft issued by a Scheduled Bank of Pakistan in favor of Dow University of Health Sciences, Karachi should be submitted at the Office of the Medical Superintendent, Sindh Infectious Diseases Hospital & Research Center, ST-8, Block No. 10, Gulshan-e-Iqbal, Karachi before the deadline for submission of Electronic Bids through EPADS.

In case of any unforeseen situation resulting in the closure of the office on the date of opening or if Government declares Holiday the tenders shall be submitted/opened on the next working day at the same time & venue. The Procuring Agency reserves the right to reject any or all bids subject to relevant provisions of SPP Rules, 2010 (Amended upto date) and may cancel the bidding process at any time prior to the acceptance of a bid or proposal under "Rule-25" of said Rules. In case of any ambiguity in between NIT and tender document, tender will be considered as senior.

For any query for e-bidding, contact the Office of the Medical Superintendent, Sindh Infectious Diseases Hospital & Research Center, ST-8, Block No. 10, Gulshan-e-Iqbal, Karachi.

**DIRECTOR**

**Works & Services**

**Dow University of Health Sciences, Karachi**







**OFFICE OF THE DIRECTOR WORKS & SERVICES**  
**DOW UNIVERSITY OF HEALTH SCIENCES, KARACHI.**  
**SINDH INFECTIOUS DISEASES HOSPITAL & RESEARCH CENTER KARACHI.**

ST-8, Block No. 10, Gulshan-e-Iqbal, Karachi. Direct No. 92-21- 99222568  
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