



INSTITUTE OF BUSINESS ADMINISTRATION KARACHI

SLA FOR MAINTENANCE OF 1MW SOLAR POWER AT IBA MAIN CAMPUS

MAINT/07/23-24

TECHNICAL DOCUMENT

SINGLE STAGE TWO ENVELOPE



INSTITUTE OF BUSINESS ADMINISTRATION IBA KARACHI
IBA MAIN CAMPUS KARACHI UNIVERSITY ENCLAVE KARACHI
UAN 111-422-422 (92-21) 38104701 www.iba.edu.pk

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*Tender Fee: Rs.1,000/-
(Non-Refundable)*

TENDER FORM

Tender # MAINT/07/23-24

**SLA FOR MAINTENANCE OF 1MW SOLAR POWER AT IBA MAIN
CAMPUS**

TECHNICAL DOCUMENT

Date of Issue : April 25, 2024

Last Date of Submission : May 15, 2024 (3:00 PM)

Date of Opening of Tender : May 15, 2024 (3:30 PM)

Company Name: _____

NTN: _____

SRB / GST Registration Number: _____

Pay Order / Demand Draft # _____, Drawn on Bank _____

Amount of Rs. _____, Dated: _____

Notice Invitation Tender (NIT)**TENDER NOTICE**

The Institute of Business Administration, Karachi (IBA) invites sealed bids from active taxpayers of firms / companies supplier registered with relevant tax authorities and well experienced in Carrying out Service Level Agreement of 1MWp or above Solar Power plant for the following tender.

Tender Title (Ref. No.)	Procedure	Bid Security
SLA for Maintenance of 1MW Solar Power at IBA Main Campus (Maint/07/23-24)	Single Stage Two Envelope	2%
Tender Fee & Dates		
<ul style="list-style-type: none"> • Fee: Rs.1,000/- each • Issuance start date: April 25, 2024 at 9 AM • Issuance end date & time: May 15, 2024 at 3:00 PM • Submission date & time: April 25, 2024 to May 15, 2024 from 9 AM to 3:00 PM • Opening date & time: May 15, 2024 at 3:30 PM • Mandatory Site Visit: May 10, 2024 at 11 AM at IBA Main Campus 		

Tender Document may be collected after submission of paid fee challan from the Office of **Head of Procurement, Fauji Foundation Building, IBA Main Campus, University Enclave, and Karachi** on any working day (Monday to Friday). Alternatively, the tender document can be downloaded from the website. The Tender fee challan is to be generated from the IBA website <https://www.iba.edu.pk/tenders/> which may be deposited in any branch of Meezan Bank Ltd. Sealed bids should be dropped in Tender Box placed at the Security Office, Gate # 4, IBA Main Campus University Enclave Karachi and will be opened on same date & venue in the presence of the bidders representatives who may wish to attend. In case of holiday the tender shall be opened / received on the next working day at same place and time. Bid Security in the form of Pay Order or Demand Draft has to be submitted in favour of **“IBA Karachi”** along with the Financial Proposal.

Kindly mention “Tender Number” at top right corner of the envelope.

N.B. IBA Karachi reserves the right to reject any bid or cancel the bidding process subject to relevant provision of SPP Rules 2010.

REGISTRAR

IBA, Main Campus, University Enclave, Karachi 75270

111-422-422 Fax (92-21) 99261508

Contact Person Sr. Manager Contracts (Project) on 38104700 ext: 2157

Email tenders@iba.edu.pk; nmalik@iba.edu.pk

Website <https://www.iba.edu.pk/tenders/>

SPPRA <https://ppms.pprasindh.gov.pk/PPMS/public/portal/notice-inviting-tender>

INTRODUCTION

Dear Tenderer:

Thank you the interest you have shown in response to the IBA's advertisement which has floated in IBA & SSPRA websites and leading newspapers on April 25, 2024 for "*SLA for Maintenance of 1MW Solar Power at IBA Main Campus*".

Sealed bids are invited from Established firms having minimum three years past experience for Service & Level Agreement of individual minimum 800 KWp or more similar nature solar power plants of reputable institutions /commercial entities. Only those firms shall be short listed which have registered office and technical qualified staff.

The Institute of Business Administration, Karachi (IBA) is the oldest business school and is contributing its part in Environmental betterment by producing renewable energy. Presently it is producing about 40 % of its total requirement by Solar Energy and is ambitious to produce 60 % of its total requirement in the next two years.

IBA Karachi has establish PV grid tied solar power plant comprising as per details mentioned in scope of works of capacity 1 MWp. The plant has been commissioned and producing power.

We expect to avail services/works/items of high standards meet our prime & basic specifications through this transaction.

Please contact Sr. Purchase Executive on 38104700 ext: 2150 for any information and query

Thank you.

-sd-

Registrar

INSTRUCTIONS TO BIDDERS

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

Instructions

- (a) The Institute of Business Administration, Karachi (IBA) expects that aspirant firms, should furnish all the required documents to ensure a transparent and genuine presentation. Therefore, it is necessary to fill in the Tender Form meticulously and sign & stamp each page. Moreover, attach required supporting document according to the requirement.
- (b) It is of utmost important to fill in the Tender Form in writing in ink or type. Do not leave any column/item blank. If more space is required, please attach a paper & clearly mention item/column name or number etc. that referred the column/item of the Tender Form.
- (c) The Tender Document from the office of Head of Procurement, Ground Floor, Fauji Foundation IBA Main Campus, University Enclave, Karachi from April 25, 2024 to May 15, 2024 during working 9:00 AM to 3:00 PM.
- (d) The last date to submit the Tender Document in sealed envelope is May 15, 2024 by 3:00 PM in the Office of the Head of Procurement, Ground Floor, Fauji Foundation IBA Main Campus, University Enclave, Karachi. The Tender will be opened on same day at 3:30 PM in the presence of representatives who may care to attend.
- (e) Bid Security of 2% of total charges will be submitted along with Tender Documents in shape of PAY ORDER / DEMAND DRAFT only in the name of Institute of Business Administration.
- (f) Successful bidder shall submit 5% Performance Security of total value of Purchase Order / Work Order in the form of Pay Order or bank guarantee before submission of invoice. The Performance Security shall extend at least three months beyond the Date of Delivery/Completion of work / Contract.
- (g) Please mention "Tender Number" at top left corner of the envelopes. IBA, Karachi may reject any bid subject to relevant provision of SPP Rules 2010 and may cancel the bidding Process at any time prior to acceptance of bid or proposal as per Rule-25(i) of said rules.
- (h) A mandatory site visit will be scheduled on May 10, 2024 at IBA Main Campus at 11 AM with IBA Representative to understand the exact nature of the job.

IB.1 Scope of Bid & Source of Funds

1.1 Scope of Bid

Solar Power System Maintenance

Solar Power System Maintenance ensures equipment life is maximized. Solar power plants require very little maintenance as there are no moving parts. Preventative maintenance is performed on major components of a solar PV system. The regular maintenance of a solar PV array is to keep the surface glass dust free. Occasional inspection and checks of the solar module ensure the performance efficiency at optimal levels. This document outlines certain preventive maintenance elements of stand-alone solar PV systems. It explains routine maintenance tasks involved in the care of, solar panels, wiring and loads for stand-alone PV systems.

Scope of Services

1. The Contractor will provide labour and labour supervisor and furnish tools & plants approved material and services to wash clean solar panels at the subject site.
2. The Contractor will provide one designated Engineer BE (Elect./Solar/Electronic minimum 3 years' experience of Solar Power Plant maintenance /B.Tech with minimum 6 (Six) years of experience of Operation & Maintenance of On Grid Solar PV System.
3. Labour employed shall be Skilled persons having all personal safety equipment shall only be allowed to be deployed for PV modules cleaning..
4. Similarly, O&M personnel shall be provided with, toolsets, Earthing rods, safety gloves, safety goggles, gumboots, helmets and all other personal protective equipment (PPE) that will be relevant to ensure human safety on non-returnable basis.
5. All tools & equipment, water hose pipe, pump, ladders, brushes etc shall arranged by the vendor/ services provider only Water and electricity connection at some designated place will be provided by IBA.
6. Any damage to the arrays or PV Modules caused during the cleaning /washing by the cleaning contractor are the responsibility of the contractor to repair or to replace with new of same make/model and specifications.
7. If compressed air is to be used, the contractor must provide the compressor/system.

8. Safety while on the job site is paramount. Persons working at height must wear fall protection harnesses and they must be attached to an anchoring system.
9. All safety apparatus and cleaning systems/procedures will require approval from the Officer In-charge prior to the start of work. If safety issues are found, IBA reserves right to stop work immediately and not restart it until the safety issues have been resolved.

1. CLEANING OF SOLAR PV PANELS

The Service provider firm will provide all type of labour, equipment, tools & plants, Scaffolding, pumps. Hose pipes, etc complete and skilled labour and qualified labour supervisor and furnish approved material and services to wash clean solar PV panels at the subject sites as detailed below.

Details of PV Panels:

- | | | | |
|-------------|-----------------|-----------------|---------------------|
| a) Car Port | Adamjee Parking | Max. Ht 15'-0" | No. of Panels = 324 |
| b) Bus Port | Main Parking | Max. Ht 30'-0" | No. of Panels =472 |
| c) Car Port | Main Parking | Max. Ht. 15'-0" | No. of Panels = 720 |

Total No. of PV Panels = 1516

Frequency of Cleaning:

After Every Fifteen days (15)

2. MAINTENANCE OF SOLAR PV PANELS ARRAYS & MOUNTING STRUCTURE

A visual inspection of the modules can then be done to check for defects in the modules such as cracks, chips, de-lamination, fogged glazing, water leaks and discoloration. If any obvious defects are found, note their location in the system logbook, so they can be monitored in the future in case further deterioration affects the modules' output. The condition of the array mounting frame should also be noted. Items to observe should include the array mounting bolts (e.g. bolt rusting) and checks to ensure that the frame and modules are firmly secured. The junction boxes should also be checked to ensure that the wires are not chewed by rodents or insects. The service provider shall replace the panel. The panel and other necessary accessories shall be provided by IBA free of cost.

3. MAINTENANCE OF SOLAR INVERTER

This component can be maintained by minimizing dust accumulation. A dry cloth should be used to wipe away any accumulated dirt/dust. A visual inspection should be done to ensure

that all the indicators such as LED lights are working and that the wires leading to and from this device are not loose. Note that the charge controller should indicate that the system is charging when the sun is up. If not, contact the installer immediately.

Details of Inverters

- | | | |
|-------------|-----------------|---------------------------------------|
| a) Car Port | Adamjee Parking | No. of Inverters =100KW+60 KW (2 Nos) |
| b) Bus Port | Main Parking | No. of Inverters = 100 KW (2 Nos) |
| c) Car Port | Main Parking | No. of Inverters = 100 KW (3 Nos) |

Total No of Inverters = 7 Nos

Service frequency: Every month

4. MAINTENANCE OF WIRING CONNECTIONS (AC & DC)

Wiring and Connections Wiring installations should be checked for any cracks, breaks or deterioration in the insulation/conduits. Inspect panel boxes (AC & DC) to ensure that they have not become a home for rodents and insects. Also inspect connections for any corrosion and/or burning. Switches/Fuses/Breakers should not spark when turned on or off. All grounding/earthing wires should be checked to ensure that they are not broken.

Service frequency: Every month

5. MAINTENANCE OF ELECTRONIC /ELECTRICAL EQUIPMENT

Maintenance & up keeping of AC /DC Combiner boxes, Data loggers, Genset Controller, Weather Station, etc.

Service frequency: Every month

6. REPORTING & ANALYSIS

The service provider shall provide a detail report on the system's performance and shall suggest for future upgrades and maintenance. This report shall be submitted after every three month.

1.2 Source of Funds

The Procuring Agency IBA KARACHI has arranged funds from its own resources.

IB.2 Eligible Bidders

2.1 Bidding is open to all firms and persons meeting the requirements as given in the bidding data.

IB.3 Cost of Bidding

1.2 The bidder shall bear all costs associated with the preparation and submission of its bid and the Procuring Agency will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process (SPP Rules 24 & 25).

B. BIDDING DOCUMENTS

IB.4 Contents of Bidding Documents

4.1 In addition to Invitation for Bids, the Bidding Documents are those stated below, and should be read in conjunction with any Addendum issued in accordance with Sub-Clause IB.6.1.

1. Instructions to Bidders & Bidding Data
2. Form of Bid, Qualification Information & Schedules to Bid Schedules to Bid
comprise the following:
 - i Schedule A: Schedule of Prices/ Bill of Quantities (BOQ)
 - ii Schedule B: Specific Program of Works.
 - iii Schedule D: Method of Performing Works.
 - iv Schedule E: Integrity Pact

3. Conditions of Contract & Contract Data.

4 Standard Forms:

- i Form of Bid Security.
- ii Form of Performance Security.
- iii Form of Contract Agreement.
- iv Form of Bank Guarantee for Advance Payment.
- v Specifications
- vi Drawings, if any

IB.5 Clarification of Bidding Documents

5.1 A prospective bidder requiring any clarification(s) in respect of the Bidding Documents may notify the Engineer/Procuring Agency at the Engineer's/ Procuring Agency 's address indicated in the Bidding Data.

5.2 An interested bidder, who has obtained bidding documents, may request for clarification of contents of bidding documents in writing and procuring agency shall respond to such queries in writing within three calendar days, provided they are received at least five calendar days prior to the date of opening of bid (SPP Rule 23-1).

IB.6 Amendment of Bidding Documents (SPP Rules 22(2) & 22)

6.1 At any time prior to the deadline for submission of Bids, the Procuring Agency may, for any reason, whether at his own initiative or in response to a clarification requested by a interested bidder, modify the Bidding Documents by issuing an addendum.

6.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub – Clause 6.1 hereof and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Procuring Agency.

6.3 To afford interested bidders a reasonable time in which to take an addendum into account in preparing their Bids, the Procuring Agency may at its discretion extend the deadline for submission of Bids.

C. PREPARATION OF BIDS

IB.7 Language of Bid

7.1 All documents relating to the Bid shall be in the language specified in the Contract Data.

IB.8 Documents Comprising the Bid

8.1 The Bid submitted by the bidder shall comprise the following:

- i. Offer /Covering Letter
- ii. Form of Bid duly filled, signed and sealed, in accordance with IB.14.3.

- iii. Schedules (A to E) to Bid duly filled and initialed, in accordance with the instructions contained therein & in accordance with IB.14.3.
- iv. Bid Security furnished in accordance with IB.13.
- v. Power of Attorney in accordance with IB 14.5.
- vi. Documentary evidence in accordance with IB.2(c) & IB.11
- vii. Documentary evidence in accordance with IB.12.

IB.9 Sufficiency of Bid

9.1 Each bidder shall satisfy himself before Bidding as to the correctness and sufficiency of his Bid rates and prices quoted/entered in the Schedule of Prices, which rates and prices shall except in so far as it is otherwise expressly provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper completion of the works.

9.2 The bidder is advised to obtain for himself at his own cost and responsibility all information that may be necessary for preparing the bid and entering into a Contract for execution of the Works.

IB.10 Bid Prices, Currency of Bid and Payment

10.1 The bidder shall fill up the Schedule of Prices (Schedule A to Bid unit rates and prices of the Works to be performed under the Contract. Prices in the Schedule of Prices/Bill of Quantities shall be quoted entirely in Pak Rupees keeping in view the instructions contained in the Preamble to Schedule of Prices.

10.2 Unless otherwise stipulated in the Conditions of Contract, prices quoted by the bidder shall remain fixed during the bidder's performance of the Contract and not subject to variation on any account.

10.3 The unit rates and prices in the Schedule of Prices and rates shall be quoted by the bidder in the currency as stipulated in Bidding Data.

10.4 Items for which no rate or price is entered by the Bidder will not be paid for by the Procuring Agency when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities.

IB.11 Documents Establishing Bidder's Eligibility and Qualifications

11.1 Pursuant to Clause IB.8, the bidder shall furnish, as part of its bid, documents establishing the bidder's eligibility to bid and its qualifications to perform the Contract if its bid is accepted.

11.2 Bidder must possess and provide evidence of its capability and the experience as stipulated in Bidding Data and the Qualification Criteria mentioned in the Bidding Documents.

IB.12 Documents Establishing Works' Conformity to Bidding Documents

12.1 The documentary evidence of the works 'conformity to the Bidding Documents may be in the form of literature, drawings and data and the bidder shall furnish documentation asset out in Bidding Data.

12.2 The bidder shall note that standards for workmanship, material and equipment, and references to brand names or catalogue numbers, if any, designated by the Procuring Agency in the Technical Provisions are intended to be descriptive only and not restrictive.

IB.13 Bid Security

13.1 Each bidder shall furnish, as part of his bid, at the option of the bidder, a Bid Security as percentage of bid price/estimated cost or in the amount stipulated in Bidding Data in Pak. Rupees in the form of *Deposit at Call/ Payee's order or a Bank Guarantee* issued by a Scheduled Bank in Pakistan in favor of the Procuring Agency valid for a period up to twenty eight (28) days beyond the bid validity date (*Bid security should 2.0% of the bid price/estimated cost SPP Rule 37*).

13.2 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Procuring Agency as non-responsive.

13.3 The bid securities of unsuccessful bidders will be returned upon award of contract to the successful bidder or on the expiry of validity of Bid Security whichever is earlier.

13.4 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed the Contract Agreement (SPP Rule 37).

13.5 The Bid Security may be forfeited:

- a) if a bidder withdraws his bid during the period of bid validity; or
- b) if a bidder does not accept the correction of his Bid Price, pursuant to Sub-Clause 16.4 (b) hereof; or
- c) in the case of a successful bidder, if he fails within the specified time limit to:
 - i. Furnish the required Performance Security or Sign the Contract Agreement.

IB.14 Validity of Bids, Format, Signing and Submission of Bid

14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the date of bid opening.

14.2 In exceptional circumstances, Procuring Agency may request the bidders to extend the period of validity for an additional period but not exceeding 1/3 of the original period. The request and the bidders' responses shall be made in writing or by cable. A Bidder may refuse the request without forfeiting the Bid Security. A Bidder agreeing to the request will not be required or permitted to otherwise modify the Bid but will be required to extend the validity of Bid Security for the period of the extension, and in compliance with IB.13 in all respects (SPP Rule 38).

14.3 All Schedules to Bid are to be properly completed and signed.

14.4 No alteration is to be made in the Form of Bid except in filling up the blanks as directed. If any alteration be made or if these instructions be not fully complied with, the bid may be rejected.

14.5 Each bidder shall prepare original and number of copies specified in the Bidding Data of the documents comprising the bid as described in IB.8 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.

14.6 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign (in the case of copies, Photostats are also acceptable). This shall be indicated by submitting a written Power of Attorney authorizing the signatory of the bidder to act for and on behalf of the bidder. All pages of

the bid shall be initialed and official seal be affixed by the person or persons signing the bid.

14.7 The Bid shall be delivered in person or sent by registered mail at the address to Procuring Agency as given in Bidding Data.

D. SUBMISSION OF BID

IB.15 Deadline for Submission, Modification & Withdrawal of Bids

15.1 Bids must be received by the Procuring Agency at the address/provided in Bidding Data not later than the time and date stipulated therein.

15.2 The inner and outer envelopes shall:

- a) be addressed to the Procuring Agency at the address provided in the Bidding Data;
- b) bear the name and identification number of the Contract as defined in the Bidding and Contract Data; and
- c) provide a warning not to open before the specified time and date for Bid opening as defined in the Bidding Data
- d) in addition to the identification required in 15.2, the inner envelopes shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared late.
- e) If the outer envelope is not sealed and marked as above, the Procuring Agency will assume no responsibility for the misplacement or premature opening of the Bid.

15.3 Bids submitted through telegraph, telex, fax or e-mail shall not be considered.

15.4 Any bid received by the Procuring Agency after the deadline for submission prescribed in Bidding Data will be returned unopened to such bidder.

15.5 Any bidder may modify or withdraw his bid after bid submission provided that the modification or written notice of withdrawal is received by the Procuring Agency prior to the deadline for submission of bids.

15.6 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security pursuant to IB.13.5 (a).

E. BID OPENING AND EVALUATION

IB.16 Bid Opening, Clarification and Evaluation (SPP Rules 41, 42 & 43)

16.1 The Procuring Agency will open the bids, in the presence of bidders representatives who choose to attend, at the time, date and in the place specified in the Bidding Data.

16.2 The bidder's name, Bid Prices, any discount, the presence or absence of Bid Security, and such other details as the Procuring Agency at its discretion may consider appropriate, will be announced by the Procuring Agency at the bid opening. The Procuring Agency will record the minutes of the bid opening. Representatives of the bidders who choose to attend shall sign the attendance sheet.

Any Bid Price or discount which is not read out and recorded at bid opening will not be taken into account in the evaluation of bid.

16.3 To assist in the examination, evaluation and comparison of Bids the Engineer/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 price or substance of the Bid shall be sought, offered or permitted (SPP Rule 43).

16.4 (a) Prior to the detailed evaluation, pursuant to IB.16.7 to 16.9, the Engineer/Procuring Agency will determine the substantial responsiveness of each bid to the Bidding Documents. For purpose of these instructions, a substantially responsive bid is one which conforms to all the terms and conditions of the Bidding Documents without material deviations. It will include determining the requirements listed in Bidding Data.

(b) Arithmetical errors will be rectified on the following basis:

If there is a discrepancy between the unit price and total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected. If there is a discrepancy between the words and figures the amount in words shall prevail. If there is a discrepancy between the Total Bid price entered in Form of Bid and the total shown in Schedule of Prices-Summary, the amount stated in the Form of Bid will be corrected by the Procuring Agency in accordance with the Corrected Schedule of Prices.

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

16.5 A Bid determined as substantially non-responsive will be rejected and will not subsequently be made responsive by the bidder by correction of the non-conformity.

16.6 Any minor informality or non-conformity or irregularity in a Bid which does not constitute a material deviation (**major deviation**) may be waived by Procuring Agency, provided such waiver does not prejudice or affect the relative ranking of any other bidders.

(A). Major (material) Deviations include: -

- i. Has not been properly signed.
- ii. Is not accompanied by the bid security of required amount and manner.
- iii. Stipulating price adjustment when fixed price bids were called for.
- iv. Failing to respond to specifications.
- v. Failing to comply with Milestones/Critical dates provided in Bidding Documents.
- vi. Sub-contracting contrary to the Conditions of Contract specified in Bidding Documents.
- vii. Refusing to bear important responsibilities and liabilities allocated in the Bidding Documents, such as performance guarantees and insurance coverage.
- viii. Taking exception to critical provisions such as applicable law, taxes and duties and dispute resolution procedures.
- ix. a material deviation or reservation is one:
 - a. Which affects in any substantial way the scope, quality or performance of the works.
 - b. Adoption/rectification where of would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

(B) Minor Deviations

Bids that offer deviations acceptable to the Procuring Agency and which can be assigned a monetary value may be considered substantially responsive, at least as to the issue of fairness. This value would however be added as an adjustment for evaluation purposes only during the detailed evaluation process.

16.7 The Engineer/Procuring Agency will evaluate and compare only the bids previously determined to be substantially responsive pursuant to IB.16.4 to 16.6 as per requirements

given hereunder. Bids will be evaluated for the complete scope of works. The prices will be compared on the basis of the Evaluated Bid Price pursuant to IB.16.8 herein below.

Technical Evaluation: It will be examined in detail whether the works offered by the bidder complies with the Technical Provisions of the Bidding Documents. For this purpose, the bidder's data submitted with the bid in Schedule B to Bid will be compared with technical features/criteria of the works detailed in the Technical Provisions. Other technical information submitted with the bid regarding the Scope of Work will also be reviewed.

16.8 Evaluated Bid Price

In evaluating the bids, the Engineer/Procuring Agency will determine for each bid in addition to the Bid Price, the following factors (adjustments) in the manner and to the extent indicated below to determine the Evaluated Bid Price:

- i. Making any correction for arithmetic errors pursuant to IB.16.4 hereof.
- ii. Discount, if any, offered by the bidders as also read out and recorded at the time of bid opening.
- iii. Excluding **provisional sums** and the provisions for **contingencies** in the Bill of Quantities **if any**, but including **Day work**, where priced competitively.

IB.17 Process to be Confidential

17.1 Subject to IB.16.3 heretofore, no bidder shall contact Engineer/Procuring Agency on any matter relating to its Bid from the time of the Bid opening to the time the bid evaluation result is announced by the Procuring Agency. The evaluation result shall be announced at least seven (07) days prior to award of Contract (SPP Rule 45). The announcement to all bidders will include table(s) comprising read out prices, discounted prices, price adjustments made, final evaluated prices and recommendations against all the bids evaluated.

17.2 Any effort by a bidder to influence Engineer/Procuring Agency in the Bid evaluation, Bid comparison or Contract Award decisions may result in the rejection of his Bid. Whereas any bidder feeling aggrieved, may lodge a written complaint to Complaint Redressal Committee as per terms and conditions mentioned in SPP Rules 31 & 32. However, mere fact of lodging a complaint shall not warrant suspension of procurement process.

17.3 Bidders may be excluded if involved in **“Corrupt and Fraudulent Practices”** means either one or any combination of the practices given below SPP Rule 2(q);

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

F. AWARD OF CONTRACT

IB.18. Post Qualification

18.1 The Procuring Agency, at any stage of the bid evaluation, having credible reasons for or prima facie evidence of any defect in contractor’s capacities, may require the contractors

to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not:

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

18.2 The determination will take into account the bidder's financial and technical capabilities. It will be based upon an examination of the documentary evidence of the bidders qualifications submitted under B.11, as well as such other information required in the Bidding Documents.

IB.19 Award Criteria & Procuring Agency's Right

19.1 Subject to IB.19.2, the Procuring Agency will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be qualified to satisfactory perform the Contract in accordance with the provisions of the IB.18.

19.2 Notwithstanding IB.19.1, the Procuring Agency reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidders or any obligation to inform the affected bidders of the grounds for the Procuring Agency's action except that the grounds for its rejection of all bids shall upon request be communicated, to any bidder who submitted a bid, without justification of the grounds. Notice of the rejection of all the bids shall be given promptly to all the bidders (SPP Rule 25).

IB.20 Notification of Award & Signing of Contract Agreement

20.1 Prior to expiration of the period of bid validity prescribed by the Procuring Agency, the Procuring Agency will notify the successful bidder in writing ("Letter of Acceptance") that his bid has been accepted (SPP Rule 49).

20.2 Within seven (07) days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Procuring Agency will send the successful bidder the Form of Contract Agreement provided in the Bidding Documents, incorporating all agreements between the parties.

20.3 The formal Agreement between the Procuring Agency and the successful bidder duly stamped at rate according to Stamp Act 1899 applicable in Sindh of bid price(updated from time to time) stated in Letter of Acceptance shall be executed within seven (07) days of the receipt of Form of Contract Agreement by the successful bidder from the Procuring Agency.

IB.21 Performance Security

21.1 The successful bidder shall furnish to the Procuring Agency a Performance Security of 10% of the contract value in the form and the amount stipulated in the Conditions of Contract within a period of fourteen (14) days after the receipt of Letter of Acceptance (SPP 39).

21.2 Failure of the successful bidder to comply with the requirements of Sub-Clauses IB.20.2& 20.3 or 21.1 or Clause IB.22 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

21.3 Publication of Award of Contract: within seven days of the award of contract, the procuring agency shall publish on the website of the authority and on its own website, if such a website exists, the results of the bidding process, identifying the bid through procurement identifying Number if any and the following information:

1. Evaluation Report;
2. Form of Contract and letter of Award;
3. Bill of Quantities or Schedule of Requirements. (SPP Rule 50)

IB.22 Integrity Pact

The Bidder shall sign and stamp the Form of Integrity Pact provided at Schedule-F to Bid in the Bidding Document for all Sindh Government procurement contracts exceeding Rupees ten (10) million. Failure to provide such Integrity Pact shall make the bid non responsive (SPP Rule 89).

BIDDING DATA

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

Instructions to Bidders

A. Method of Procurement:

Single Stage Two Envelope Procedure

- i. Bid shall comprise of a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
- ii. Envelopes shall be marked as “**FINANCIAL PROPOSAL**” and “**TECHNICAL PROPOSAL**” in bold and legible letters to avoid confusion;
- iii. **PROPOSAL**” in bold and legible letters to avoid confusion;
- iv. Initially, only the envelope marked “**TECHNICAL PROPOSAL**” shall be opened;
- v. Envelope marked as “**FINANCIAL PROPOSAL**” shall be retained in the custody of the procuring agency without being opened;
- vi. Procuring agency shall evaluate the technical proposal in a manner prescribed in given
- vii. “**Bid Evaluation Criteria**” in the bidding document, without reference to the price and reject any proposal which does not conform to the specified requirements;
- viii. No amendments in the technical proposal shall be permitted after submission of technical proposal;
- ix. Financial proposals of technically qualified bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
- x. Financial proposal of bids found technically non-responsive shall be returned unopened to the respective bidders; and
- xi. Bid found to be the lowest evaluated shall be accepted.

1.1 Name of Procuring Agency

INSTITUTE OF BUSINESS ADMINISTRATION IBA KARACHI

- a) Service Level Agreement SLA of 1 MWp Bus Port, Car Port & Roof Mounted Grid Tied Solar PV Systems at IBA Main Campus Karachi University Enclave including Synchronizing with Existing Generator including online monitoring system and connection with K -Electric for Net Metering
- b) The firm/service provider will be responsible for One (1) years complete SLA maintenance (including biweekly cleaning of the panels) & other services as specifically mentioned in scope of work. Bidders are directed to visit the site before submitting the bid.

- c) Only those firms having qualified Engineers in relevant solar & skilled labour and having experience in O & M of solar power plant shall be short listed.

1.2 **Procuring Agency's Address:** IBA Karachi Main campus KU Enclave Karachi

1.3 Bid shall be quoted entirely in Pak. Rupees.

1.4 The bidder has the financial, technical and constructional capability necessary to perform the Contract as follows:

I. Financial capacity:

- a. Documentary evidence established that the bidder is financially sound and is qualified to perform the contract if its bid is accepted.
- b. Must have minimum turnover of Rs.5.00 million yearly average over last three years. (Documentary evidence like bank statement, Audit report is required and mandatory).

II. Technical capacity:

- a. Bidder must have valid registration with following :
- b. Pakistan Engineering Council in category C-6, EE-04, and EE-11**
- c. Relevant Tax authorities i.e. for income tax and
- d. Sindh Revenue Board (may have valid registration or must have applied for SRB Registration).
- e. Electric Inspectorate Karachi Region
- f. The Bidder shall have minimum three (3) years' SLA experience of similar solar PV systems min 800 KWp with some reputable company /Institution...
- g. Performance certificate from Employer is mandatory
- h. Must have experienced staff available in the relevant field .the bidder shall depute a qualified BE (Elect./Electronic) having at least three years' experience of Solar Power O & M or Equivalent B Tech. with 6 Years' experience. (Documentary Evidence is mandatory).
- i. Bidder will provide written Power of Attorney authorizing the signatory of the bidder to act for and on behalf of the bidder (if applicable).
- j. The firm must not be black listed by any public or private organization.

III. Following Document **properly flagged / marked** shall be submitted with technical bids (one original plus one copy):

- a. Copy of valid PEC Certificate in categories C-6 (or above), with EE-04, and EE-11
- b. Copy of Income Tax

- c. Copy of Registration with SRB or proof of SRB registration under process);
- d. Copy of Registration with Electric Inspectorate Karachi Region
- e. Audited financial statements of last three years/or any other legal proof of financial stability (whichever is applicable);
- f. List of technical staff available for this work and their CVs;
- g. List of similar assignments minimum two (2) projects under-taken over the past 3 years and their completion certificates;
- h. Affidavit on Rs.100 non judicial stamp paper that firm has never been blacklisted in any organization i.e. Public or private Sector;
- i. In case of joint ventures/associated firms participating with principal firm, a letter of support must be provided in favor of bidder firm by the supporting firms for this particular project. The JV will be evaluated as per PEC Byelaws; and

IV. Following Document shall be submitted with financial bids (one original, one copy):

- a. Duly Filled Price Schedule on "Schedule A to Bid" form
- b. Bid Money of 2.0% of total offered bid in form and shape as given in "**Instruction to Bidder.**"

1.5 Amount of Bid Security

Amount of Bid Security is 2% of total offered bid amount/estimated cost (refundable) in form and shape as given in "**Instruction to bidder.**"

1.6 Period of Bid Validity

Validity period of this bid is 60 days.

1.7 Number of Copies of the Bid to be submitted:

One (1) original and one (1) copy.

1.8 (a) Procuring Agency's Address for the Purpose of Bid Submission

INSTITUTE OF BUSINESS ADMINISTRATION IBA Karachi MAIN CAMPUS UNIVERSITY
ENCLAVE

1.10 Deadline for Submission of Bids

Time: 11:00 am on April 03, 2024.

1.11 Venue, Time, and Date of Bid Opening

Venue: IBA Main Campus at 11:30 AM on April 03, 2024

1.12 BID EVALUATION CRITERIA:**Bid Evaluation Criteria for Procurement of Solar PV Systems for Boys Hostel at IBA Main Campus Karachi University Enclave Karachi****Bid Evaluation Check List**

Sr. No.	Item	Remarks
1	Specific Works Data	
2	Separate Technical & Financial Bids	
3	P.E.C. Registration	
	Valid C6 and above, EE04, EE11 (solar)	
4	Valid Income Tax Registration	
5	Valid License from Sindh Electrical Inspector Karachi region	
6	Registration with Sindh Revenue Board	
7	List of similar projects (Minimum 800 KWp) individual comprising car Port or elevated structure undertaken during last 3 years	
8	At least 3 years' experience in Solar PV Energy (Date shall be taken from the date of C-6 Registration of PEC.)	
9	List of Experienced Staff along with CVs.	
10	Affidavit of Non-Blacklisting & No litigation.	
	In case of any litigation information should be submitted	
11	Financial Statement (min. average annual turnover of Rs.5 M) of last 3 Years Bank Statement or any other legal proof of financial stability. (whichever is applicable)	
Remarks: Documentary Evidence of all above is mandatory.		

TECHNICAL EVALUATION CRITERIA OF BID SUBMITTED**Minimum Threshold 75%**

Sr. No	Description	Max. Marks	Marks Obtained
1.	<p><u>Company Setup</u> For more than 5 Years 20 Marks For 3 Years or More up to 5 years 10 Marks For Less than 3Yrs 0 Marks (The date shall be considered from PEC Certification in C-6 with EE-11 & EE-04). Kindly provide the registered office address.</p>	20	
2	<p><u>Technical Staff</u> BE- Elec./Electronic 3 Years or more 30 Marks or BTech- Elect/Electronic 6Yrs or more 30 Marks. or DAE Elect/Electronic 10 Years 30 Marks</p>	30	
3	<p><u>Working Experience</u> SLA Solar PV Panels Car Port/ or Roof Mounted 500 KWp (individual project) or more during the Last 3 years 5 Marks for each Projects Max 15 Marks Completion Certificate from Employer is Mandatory with Contact Nos of the Employer should also be provided.</p>	15	
4	<p><u>Work in Hand</u> Solar PV Panels inst. Equal or more than 500 KWp (individual) during the Last 1 Years 05 Nos For Each Projects Max 15 Marks Work Order is Mandatory with Contact Nos of The Employer</p>	15	
5	<p><u>Financial Turn Over</u> 5 million or More average turn over per Year during the last three years 20 Marks 3 Million or more but Less than 5 million 10 Marks 2 Million or more but less than 3 million 5 marks No marks for Less than 2 million</p>	20	

FORM OF BID AND SCHEDULES TO BID

FORM OF BID (LETTER OF OFFER)

Bid Reference No. _____

_____ (Name of Works) To:

Gentlemen,

1. Having examined the Bidding Documents including Instructions to Bidders, Bidding Data, Conditions of Contract, Contract Data, Specifications, Drawings, if any, Schedule of Prices and Addenda Nos. _____ for the execution of the above-named works, we, the undersigned, being a company doing business under the name of and address

_____ and being duly incorporated under the laws of Pakistan hereby offer to execute and complete such works and remedy any defects therein in conformity with the said Documents including Addenda thereto for the Total Bid Price of Rs _____ (Rupees _____) or such other sum as may be ascertained in accordance with the said Documents.

2. We understand that all the Schedules attached hereto form part of this Bid.

3. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount of _____ drawn in your favor or made payable to you and valid for a period of twenty eight (28) days beyond the period of validity of Bid.

4. We undertake, if our Bid is accepted, to commence the Works and to deliver and complete the Works comprised in the Contract within the time(s) stated in Contract Data.

5. We agree to abide by this Bid for the period of _____ days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

6. Unless and until a formal Agreement is prepared and executed, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

7. We undertake, if our Bid is accepted, to execute the Performance Security referred to in Conditions of Contract for the due performance of the Contract.

- 8. We understand that you are not bound to accept the lowest or any bid you may receive.
- 9. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a bid for the Works.

Dated this _____ day of _____, 2024 in the capacity of

_____ duly authorized to sign bid for and on behalf of

(Name of Bidder in Block Capitals)

Signature _____
(Seal)

Address

Witness:

(Signature): _____

Name: _____

Address: _____

SCHEDULES TO BID INCLUDE THE FOLLOWING:

- Schedule A to Bid: Schedule of Prices
- Schedule B to Bid: Specific Works Data
- Schedule C to Bid: Proposed Program of Works
- Schedule D to Bid: Method of Performing Works
- Schedule E to Bid: Integrity Pact

PREAMBLE TO SCHEDULE OF PRICES

The bidder is directed to read these carefully before submitting the Bid

1. General

1.1 The Schedule of Prices shall be read in conjunction with the Conditions of Contract, Contract Data together with the Specifications and Drawings, if any.

1.2 The Contract shall be for the whole of the works as described in these Bidding Documents. Bids must be for the complete scope of the work.

2. Description

2.1 The general directions and descriptions of works and materials are not necessarily repeated nor summarized in the Schedule of Prices. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the Schedule of Prices.

3. Units & Abbreviations

3.1 Units of measurement, symbols and abbreviations expressed in the Bidding Documents shall comply with the System International 'Unit (SI Units).

4. Rates and Prices

4.1 Except as otherwise expressly provided under the Conditions of Contract, the rates and amounts entered in the Schedule of Prices shall be the rates at which the Contractor shall be paid and shall be the full inclusive value of the works set forth or implied in the Contract; except for the amounts reimbursable, if any to the Contractor under the Contract.

4.2 Unless otherwise stipulated in the Contract Data, the premium, rates and prices entered by the bidder shall not be subject to adjustment during the performance of the Contract.

4.3 All duties, taxes and other levies payable by the Contractor shall be included in the rates and prices.

4.4 The whole cost of complying with the provisions of the Contract shall be included in the items provided in the Schedule of Prices, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the Works and no separate payment will be made for those items.

The rates, prices and amounts shall be entered against each item in the Schedule of Prices. Any item against which no rate or price is entered by the bidder will not be paid for by the Procuring Agency when executed and shall be deemed covered by the rates and prices for other items in the Schedule of Prices.

4.5 (a) The bidder shall be deemed to have obtained all information as to and all requirements related thereto which may affect the bid price.

*(b) The Contractor shall be responsible for making complete arrangements for the transportation and installation of equipment to the Site.

4.6 The Contractor shall provide for all parts of the Works to be completed in every respect. Notwithstanding that any details, accessories, etc. required for the complete installation and satisfactory operation of the Works, are not specifically mentioned in the Specifications, such details shall be considered as included in the Contract Price.

5. Bid Prices

5.1 Break-up of Bid Prices

The various elements of Bid Prices shall be quoted as detailed by the Procuring Agency in the format of Schedule of Prices. The bidder shall recognize such elements of the costs which he expects to incur the performance of the Works and shall include all such costs in the rates and amounts entered in the Schedule of Prices.

5.2 Total Bid Price

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

6. Provisional Sums and Day work

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

6.2 Day work rates in the contractor 's bid is to be used for small additional amounts of work and only when the Engineer have given written instructions in advance for additional work to be paid for in that way.

*SCHEDULE – B TO BID: SPECIFIC WORK DATA***Specification****Solar Panel Maintenance**

This manual outline certain preventive maintenance elements of small stand-alone solar PV systems. It explains routine maintenance tasks involved in the care of batteries, solar panels, wiring and loads for stand-alone PV systems.

Proper maintenance ensures that solar system life is preserved for as long as possible and the original conditions of the system are sustained, while compensating for normal wear and tear. Solar systems require little maintenance as compared to other electric systems such as diesel generators; however, they are not maintenance free. This document provides instructions on performing preventative maintenance on major components of a solar PV system:

1. Solar Panels
2. Inverters
3. Mounting Structures
4. AC/DC Wiring and connections
5. Weather Station
6. Genset Controller
7. AC/DC Combiner Boxes
8. Data Loggers

Solar Panel Maintenance

The solar array (a number of solar panels connected together) is often thought to be maintenance free. However, occasional maintenance and inspection of the solar array must be performed to ensure the optimal use of the solar panels. This can be done by keeping the surface (glass) area of the module clean from any excess dirt.

To remove a layer of dust and dirt from the modules, simply wash the panel with water.

If the module has thick dirt or grime and bird droppings, which are harder to remove, wash with cold water and rub the panel surface with a sponge. Do not use a metal brush to clean solar panel surface. Detergents should not be used.

2. A visual inspection of the modules can then be done to check for defects in the modules such as cracks, chips, de-lamination, fogged glazing, water leaks and discoloration. If any

obvious defects are found, note their location in the system logbook, so they can be monitored in the future in case further deterioration affects the modules' output.

3. The condition of the array mounting frame should also be noted. Items to observe should include the array mounting bolts (e.g. bolt rusting) and checks to ensure that the frame and modules are firmly secured. The junction boxes should also be checked to ensure that the wires are not chewed by rodents or insects. Take adequate precautions while doing maintenance of the solar panels since these are located on rooftops and there is the risk of falling off.

Guidelines of Array Washing Procedure

1. Detailed Description

1.1 Do not touch modules with bare hands. Wearing cleaning gloves during cleaning to avoid fingerprints and other grime left on the glass.

1.2 Do not use knives, blades, steel wool and other abrasive materials to clean the glass.

1.3 Various types of soft foams, non-woven fabrics, brooms, soft sponges, and soft brushes are permitted.

As shown in figure above, the blue face of a sponge can only be used to clean the aluminium frame of the modules. It cannot use to clean the glass side as it will scratch up the glass which resulted in reducing the output power.

1.4 The nylon brushes which have the wire diameters from 0.06-0.1 mm are recommended to use.

1.5 Glass cleaner, alcohol and methyl alcohol are only allowed to use in case of the water cannot clean properly.

1.6 Do not use abrasives, abrasive cleaners, scrubbers, polishers, sodium hydroxide, benzene, nitrite diluents, acids, or alkalis products.

1.7 During cleaning, the hydraulic pressure must be below 35 Bar to avoid the micro-crack of the front side of a module. It is not recommended cleaning the back side of conventional modules.

1.8 Do not use steam or corrosive chemicals to speed up the cleaning process.

1.9 Do not clean the module when the cable and glass are broken, which may trigger a risk of electric shock.

1.10 Do not stand on the module while cleaning it cause hidden micro cracks.

2. Cleaning of PV Panels

2.1 Cleaning time.

Morning before 10:00 A.M, Evenings after 4:00 P.M, and days with low irradiance are a good time for cleaning. It is suggested that to clean the modules while the inverter being off.

2.2 Avoid shading.

Avoid shading while cleaning; shading causes Hot Spot effect which may result in reducing output power even fire.

2.3 Cleaning Plan

Plan the cleaning period and divide the area into subdivisions according to the specific circumstances.

The cleaning work in each subdivision should be carried out based on the electrical structure of PV station layout.

2.4 Cleaning Frequency

As Karachi is situated in an arid zone where dust & pollutant accumulate in very frequently hence it is recommended to clean the panels after every fifteen days.

3. Cleaning Process.

A Normal cleaning work including three steps: sweeping, scraping and washing.

3.1 Step 1: Sweeping.

The sweeping process should be taken by dried duster or towels. First, remove the dirt and leaves on the module surface. If there are no other deposits, modules can be cleaned only at this step.

3.2 Step 2: Scraping.

Sticky stuff such as dirt, bird droppings, leaves, etc., should be scraped off with non-woven fabric or brush, and High-hardness tools are forbidden to use.

3.3 Step 3: Washing.

For the colour substances such as bird dropping, plant juice, etc. on the glass surface or dirt that hardly dust off, then water-cleaning should be used. The coloured substances are generally removed by spraying clean water on the region with pollutants, then scraping with a brush. Oil substances may be removed by cleaning water mixed with alcohol and scraping it off with a brush. If necessary, the module may be cleaned with glass-cleaning detergent, together with non-woven fabric or glass scrubbers. Frameless bifacial modules cleaning

process are same as the conventional PV modules; however, as the module without the frames, it is necessary to fully consider the deformation caused by the applied stress. Avoid using larger force, and prevent the module being damaged or safety accident.

3.4 Water Cleaning Statement: Description	Unit	Value
pH		7-8
TDS -Total Dissolved Solid	mg/l	800

4. Safety Instruction.

4.1 Avoid Leakage.

Photovoltaic power stations have many electrical components, which have a high voltage potential (~hundreds of volts). Although the washing process carries out under low sun irradiation (irradiation ≤ 200 W/m²), the modules still contain high voltage. Any devices connected to wire may have electric leakage.

Hence, before washing the module, it is better to first check the abnormal record of electricity and analyse the risk of electric leakage. In addition, it is necessary to use a voltage tester screwdriver to check frames, holders and glass surfaces to eliminate the risk of electricity risk and hence ensure human safety.

4.2 Injury.

The aluminium frame of the module or the corner of the glass can form sharp corners. Therefore, it is necessary to wear appropriate protective clothing and a safety helmet to avoid injury. Do not wear clothing or use the tools with Hooks, laces, or threads.

4.3 Avoid Scratch.

Hard or sharp tools are not allowed when washing modules for such tools could cause scuffing problems or even crack of tempered glass.

INSPECTION AND MAINTENANCE CHECKLIST

PART A- GENERAL INFORMATION

S.No.	BASIC INFORMATION	
1	Site Address	
2	Day & Time of activity	
3	PPE Checked	
4	Person Details	

PART B- MONTHLY CHECKLIST

		Yes	No	N/A	Comments
S.No.	ELECTRICAL CHECKLIST				
5	Meter and Inverter Readings are noted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6	Meter and Inverter connections are properly intact.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7	Inverter giving unusual sound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Any loose connections of inverter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Inverter with unusual smell	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	Conduits (Pipes, Tray) are intact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	Inverter Fans Blocked / Not Working	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12	All DC and AC Cables are properly insulated and connected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	All earthlings' cables are intact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14	All strings are operative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15	MC-6 and Lugs are intact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16	Fuses, SPD's, and Breaker are intact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17	AC Distribution box inside is clean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18	Label signs are well-posted on the lid of AC Box	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19	Status of AC cable Connection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20	All MC-6 and electrical connections are properly checked after any replacement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	MECHANICAL CHECKLIST				
21	The structure is in proper condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

22	All panel / modules have been inspected for any defects including delamination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23	Physical damage of solar pane	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24	Nut Bolt and Rawal Bolts are properly intact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25	Chemical filling of structure exist / refilled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26	Is Structure rusted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27	Is rusted structure painted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
28	Is cable tray and DB rusted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
29	Is rusted cable tray and DB painted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30	Conduits, Saddle and Tees are properly placed. Replaced if damaged.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	CLEANING CHECKLIST				
31	All Panels are properly washed with Water (Twice in a month)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
32	Panels are properly dried	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
33	No presence of stagnant water on panels, structures, and surroundings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
34	Pictures taken before and after cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
35	Drainpipe of Roof cleared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PART C- TEST REPORT -QUARTERLY CHECKLIST

S.No	ELECTRICAL MEASUREMENTS					
36	Strings	String Number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Module model & Power	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Number of modules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Closed/Open Circuit Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
37	String wiring and test	String Polarity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		On load current (A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
38	Inverter Reading (KWh)	Total (kWh)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Current (kWh)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Day (kWh)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
39	Inverter	Make & model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Serial number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Functioning Status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Inverter Cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Inverter Surrounding environment is clean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Inverter with unusual sound or smell	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Inverter installation is well ventilated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

		Screws for connectors of inverter is tighten properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
40	Bush / tree branches / vegetation Cutting		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
41	Pictures	Fuses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Inverters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		AC & DC Box	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Solar Panels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
42	Others	Distance of DC Cables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Insulation of Cables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Heating of electrical equipment(with temp meter or manually)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

OPERATION & MAINTENANCE

S.No.	Task	Contractor	Owner
1	Cleaning Equipment	✓	
2	Water & Distribution Point		✓
3	Ladder Platform access to Carport & Bus port PV Panels		✓
4	Electricity Socket Point		✓
5	Labour	✓	
6	Supervision	✓	
7	Monitoring	✓	
8	Maintenance	✓	
9	Plant Management	✓	

The required services as per SLA matrix given below:

Description	SLA Matrix for Prime Hours	
	Max. Response Time	Max. Rectification Time (MTTR)
SLA (Service Level Agreement) Operation & Maintenance of 1mwp Solar Carport, Bus Port & Roof Mounted Grid Tied PV Systems At Institute Of Business Administration IBA Main Campus Karachi University Enclave	Immediate	2 Hours (excluding force majeure, subject to the approval of IBA relevant authority.

INVERTER PERFORMANCE

S.No.	Generati on Time	Device Status	Inv. Efficiency (%)	Input Power (KW)	Active Power (KW)	Reactive Power (kVar)	Power Factor	Grid Frequency (Hz)	Power Grid Current (A)		
									A	B	C
1	__/__/20__ 06:00:00,										
2	__/__/20__ 07:00:00,										
3	__/__/20__ 08:00:00,										
4	__/__/20__ 09:00:00,										
5	__/__/20__ 10:00:00,										
6	__/__/20__ 11:00:00,										
7	__/__/20__ 12:00:00,										
8	__/__/20__ 13:00:00,										
9	__/__/20__ 14:00:00,										
10	__/__/20__ 15:00:00,										
11	__/__/20__ 16:00:00,										
12	__/__/20__ 17:00:00,										
13	__/__/20__ 18:00:00,										
14	__/__/20__ 19:00:00,										

ENERGY PERFORMANCE		
S.No.	Generation Time	Energy Yield (kWh)
1	___/___/20__ 06:00:00,	
2	___/___/20__ 07:00:00,	
3	___/___/20__ 08:00:00,	
4	___/___/20__ 09:00:00,	
5	___/___/20__ 10:00:00,	
6	___/___/20__ 11:00:00,	
7	___/___/20__ 12:00:00,	
8	___/___/20__ 13:00:00,	
9	___/___/20__ 14:00:00,	
10	___/___/20__ 15:00:00,	
11	___/___/20__ 16:00:00,	
12	___/___/20__ 17:00:00,	
13	___/___/20__ 18:00:00,	
14	___/___/20__ 19:00:00,	

SOLAR MODULES CLEANING SCHEDULE										
S.No.	Check Point	Description	Day				Monthly		Quarterly	
			Day-1		Day-15		Yes	No	Day-90	
			Yes	No	Yes	No			Yes	No
1	Solar Modules Cleaning	Cleaning of Solar modules as per cleaning instruction manual								
2	Operation & Maintenance	Maintenance of solar plant monthly as per checklist								
3	Solar Plant Inspection	Inspection of complete plant quarterly as per checklist								

SCHEDULE – C TO BID: PROPOSED PROGRAMME OF WORKS

Following details must be submitted for evaluation of technical bids duly marked as
“Response to Schedule C to bid.”

The bidder shall provide a Program in a bar-chart or Program Evaluation and Review Technique (PERT) or Critical Path Method (CPM) showing the sequence of work items by which he proposes to complete the works of the entire Contract. The Program should indicate the sequence of work items and the period of time during which he proposes to complete the works including the activities like designing, schedule of submittal of drawings, ordering and procurement of materials, manufacturing, delivering, construction of installation works, erection, testing and commissioning of works to be supplied under the Contract.

SCHEDULE – D TO BID: METHOD OF PERFORMING WORKS

Following details must be submitted for evaluation of technical bids duly marked as “Response. to Schedule D to bid”

The bidder is required to submit a narrative outlining the method of performing the Works duly marked as “**Response to Schedule D to Bid**”. Detailed working on schedule D will help the bidder to prepare an exact and doable financial offer. The narrative should indicate in detail and include but not be limited to:

- The sequence and methods in which he proposes to carry out the Works, including the number of shifts per day and hours per shift, he expects to work.
- Provide detailed operation & maintenance strategy for one year.
- Organization chart indicating head office & field office personnel involved in management, supervision, and engineering of the Works to be done under the Contract.

SCHEDULE – E TO BID: (INTEGRITY PACT)
DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC
PAYABLE BY CONTRACTORS
(FOR CONTRACTS WORTH RS. 10.00 MILLION OR MORE)

Contract No. _____ Dated _____

Contract Value: _____

Contract Title: _____

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

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

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

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

Notwithstanding any rights and remedies exercised by PA in this regard,
[name of
Supplier/Contractor/Consultant] agrees to indemnify PA for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to PA in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Contractor] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from PA.

[Procuring Agency]

[Contractor]

CONDITIONS OF CONTRACT & CONTRACT DATA

CONDITIONS OF CONTRACT

1. GENERAL PROVISIONS

1.1 Definitions

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

The Contract

Contract means the Contract Agreement and the other documents listed in the 1.1.1 Contract Data.

1.1.2 Specifications means the document as listed in the Contract Data, including Procuring Agency's requirements in respect of design to be carried out by the Contractor (if any), and any Variation to such document.

1.1.3 Drawings means the Procuring Agency's drawings of the Works as listed in the Contract Data, and any Variation to such drawings.

Persons

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

1.1.5 Contractor means the person named in the Contract Data and the legal successors in title to this person, but not (except with the consent of the Procuring Agency) any assignee.

1.1.6 Party means either the Procuring Agency or the Contractor.

Dates, Times, and Periods

1.1.7 Commencement Date means the date fourteen(14) days after the date the Contract comes into effect or any other date named in the Contract Data.

1.1.8 Day means a calendar day

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

Money and Payments

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

Other Definitions

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

1.1.12 Country means the Islamic Republic of Pakistan.

1.1.13 Procuring Agency's Risks means those matters listed in Sub-Clause 6.1.

1.1.14 Force Majeure means an event or circumstance which makes performance of a Party's obligations illegal or impracticable and which is beyond that Party's reasonable control.

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

1.1.16 Plant means the machinery and apparatus intended to form or form part of the Works.

1.1.17 Site means the places provided by the Procuring Agency where the Works are to be executed, and any other places specified in the Contract as forming part of the Site.

1.1.18 Variation means a change which is instructed by the Engineer/Procuring Agency under Subclause 10.1.

1.1.19 Works means any or all the works whether Supply, Installation, Construction etc. and design (if any) to be performed by the Contractor including temporary works and any variation thereof.

1.1.20 Engineer means the person notified by the Procuring Agency to act as Engineer for the purpose of the Contract and named as such in Contract Data.

1.2 Interpretation

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

1.3 Priority of Documents

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

1.4 Law

The law of the Contract is the relevant Law of Islamic Republic of Pakistan.

1.5 Communications

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

1.6 Statutory Obligations

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

2. THE PROCURING AGENCY

2.1 Provision of Site

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

2.2 Engineer's/Procuring Agency's Instructions

The Contractor shall comply with all instructions given by the Procuring Agency or the Engineer, if notified by the Procuring Agency, in respect of the Works including the suspension of all or part of the works.

2.4 Approvals

No approval or consent or absence of comment by the Engineer/Procuring Agency shall affect the Contractor 's obligations.

3. THE CONTRACTOR

3.1 General Obligations

The Contractor shall carry out the works properly and in accordance with the Contract. The Contractor shall provide all supervision, labor, Materials, Plant and Contractor 's Equipment which may be required

3.2 **Contractor's Representative**

The Contractor shall appoint a representative at site on full time basis to supervise the execution of work and to receive instructions on behalf of the Contractor but only after obtaining the consent of the Procuring Agency for such appointment. Such authorized representative may be substituted/ replaced by the Contractor at any time during the Contract Period but only after obtaining the consent of the Procuring Agency as aforesaid.

3.3 **Subcontracting**

The Contractor shall not subcontract the whole of the works. The Contractor shall not subcontract any part of the works without the consent of the Procuring Agency.

3.4 **Performance Security**

The Contractor shall furnish to the Procuring Agency within fourteen (14) days after receipt of Letter of Acceptance a Performance Security 5% of the contract value at the option of the bidder, in the form of Payee's order /Bank Draft or Bank Guarantee from scheduled bank for the amount and validity specified in Contract Data.

4. *PROCURING AGENCY'S RISKS*

4.1 **The Procuring Agency's Risks**

The Procuring Agency 's Risks are:-

- a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies, within the Country.
- b) Rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war, within the Country.
- c) riot, commotion or disorder by persons other than the Contractor's personnel and other employees including the personnel and employees of Sub-Contractors, affecting the Site and/or the Works.
- d) ionizing radiations, or contamination by radioactivity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such an assembly, except to the extent to which the Contractor/Sub-Contractors may be responsible for the use of any radio-active material ;

- e) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds ;
- f) use or occupation by the Procuring Agency of any part of the Works, except as may be specified in the Contract ;
- g) late handing over of sites, anomalies in drawings, late delivery of designs and drawings of any part of the Works by the Procuring Agency's personnel or by others for whom the Procuring Agency is responsible;
- h) a suspension under Sub-Clause 2.3 unless it is attributable to the Contractor's failure; and
 - i) physical obstructions or physical conditions other than climatic conditions, encountered on the Site during the performance of the Works, for which the Contractor immediately notified to the Procuring Agency and accepted by the Procuring Agency.

5. TIME FOR COMPLETION

5.1 Execution of the Works

This SLA Contract is for One Year (365 days) Contractor shall commence the Works on the Commencement Date and shall proceed expeditiously as per agreed schedule of work

5.2 Program

Within the time stated in the Contract Data, the Contractor shall submit to the Engineer/Procuring Agency a program for the Works in the form stated in the Contract Data.

5.3 Extension of Time

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

5.4 Late Completion

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

6. *TAKING-OVER*

6.1 **Completion**

The Contractor may notify the Engineer/Procuring Agency when he considers that the Works are complete.

6.2 **Taking-Over Notice**

Within fourteen (14) days of the receipt of the said notice of completion from the Contractor the Procuring Agency/Engineer shall either takeover the completed works and issue a Certificate of Completion to that effect or shall notify the Contractor his reasons for not taking-over the works. While issuing the Certificate of Completion as aforesaid, the Procuring Agency/Engineer may identify any outstanding items of work which the Contractor shall undertake during the Maintenance Period.

7.3 **Changes in the Quantities.**

- a) If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Procuring Agency/Engineer shall adjust the rate to allow for the change and will be valued as per sub clause 10.2.
- b) The Engineer shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Procuring Agency.
- c) If requested by the Engineer, the contractor shall provide the Engineer with a detailed cost breakdown of any rate in the Bill of Quantities.

7.4 **Early Warning**

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

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

8.1 **Valuation of Claims**

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

8.2 Variation and Claim Procedure

The Contractor shall submit to the Engineer/Procuring Agency an itemized detailed breakdown of the value of variations and claims within twenty-eight (28) days of the instruction or of the event giving rise to the claim. The Engineer/Procuring Agency shall check and if possible, agree the value. In the absence of agreement, the Procuring Agency shall determine the value.

9. CONTRACT PRICE AND PAYMENT

9.1 Terms of Payments

The payment to the contractor shall be made after the close of every quarter. The payment shall be made after submission of invoice, in the form deemed necessary, along with the applicable taxes to the designated maintenance office of the IBA. The monthly progress reports and verifiable work done scheduled should also accompany the invoice for payment. Any advance payment will be subject to Bank Guarantee from a scheduled bank.

9.4 Currency

Payment shall be in the currency stated in the Contract Data.

10. DEFAULT

10.1 Defaults by Contractor

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

If the Contractor has not taken all practicable steps to remedy the default within fourteen (14) days after receipt of the Procuring Agency's notice, the Procuring Agency may by a second notice given within a further twenty-one (21) days, terminate the Contract. The Contractor shall then demobilize from the Site leaving behind any Contractor's Equipment which the Procuring Agency instructs, in the second notice, to be used for the completion of the Works at the risk and cost of the Contractor.

10.2 Defaults by Procuring Agency

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

If the default is not remedied within twenty-eight(28) days after the Procuring Agency's receipt of the Contractor's notice, the Contractor may by a second notice given within a further twenty one (21) days, terminate the Contract. The Contractor shall then demobilize from the Site.

10.3 Insolvency

If a Party is declared insolvent under any applicable law, the other Party may by notice terminate the Contract immediately. The Contractor shall then de mobilize from the site leaving behind, in the case of the Contractor's insolvency, any Contractor's Equipment which the Procuring Agency instructs in the notice is to be used for the completion of the Works.

10.4 Payment upon Termination

After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the works executed and of the Materials and Plant reasonably delivered to the site, adjusted by the following:

- a) any sums to which the Contractor is entitled under Sub-Clause 10.4,
- b) any sums to which the Procuring Agency is entitled,
- c) if the Procuring Agency has terminated under Sub-Clause 12.1 or 12.3, the Procuring Agency shall be entitled to a sum equivalent to twenty percent(20%) of the value of parts of the Works not executed at the date of the termination, and
- d) if the Contractor has terminated under Sub-Clause 12.2 or 12.3 , the Contractor shall be entitled to the cost of his de mobilization together with a sum equivalent to ten percent (10%) of the value of parts of the works not executed at the date of termination.

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

11. RISKS AND RESPONSIBILITIES

11.1 Contractor's Care of the Works

Subject to Sub-Clause 9.1, the Contractor shall take full responsibility for the care of the Works from the Commencement Date until the date of the Procuring Agency's/Engineer's issuance of Certificate of Completion under Sub-Clause 8.2. Responsibility shall then pass to the Procuring Agency. If any loss or damage happens to the Works during the above period, the Contractor shall rectify such loss or damage so that the Works conform with the Contract.

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

11.2 Force Majeure

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

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

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

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

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

12. INSURANCE

12.1 Arrangements

The Contractor shall, prior to commencing the Works, effect insurances of the types, in the amounts and naming as insured the persons stipulated in the Contract Data except for items (a) to (e) and (i) of the Procuring Agency's Risks under Sub-Clause 6.1. The policies shall be issued by insurers and in terms approved by the Procuring Agency. The Contractor shall provide the Engineer/Procuring Agency with evidence that any required policy is in force and that the premiums have been paid.

12.2 Default

If the Contractor fails to effect or keep in force any of the insurances referred to in the previous Subclause, or fails to provide satisfactory evidence, policies or receipts, the Procuring Agency may, without prejudice to any other right or remedy, effect insurance for the cover relevant to such as a default and pay the premiums due and recover the same plus a sum in percentage given in Contractor Data from any other amounts due to the Contractor.

13 RESOLUTIONS OF DISPUTES

13.1 Engineer's Decision

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

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

13.2 Notice of Dissatisfaction

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

If a contractor is dissatisfied with the decision of the Engineer of the department or decision is not given in time then he can approach Superintending Engineer within 14 days, in case of dissatisfaction with decision of Superintending Engineer or not decided within 28 days, then arbitration process would be adopted as per clause 15.3.

13.3 Arbitration

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

14 INTEGRITY PACT

14.1 If the Contractor or any of his Sub-Contractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Schedule-F to his Bid, then the Procuring Agency shall be entitled to:

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

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

1. BIDDING DATA

Name of Procuring Agency: Institute of Business Administration, Karachi

(a) Brief Description of Works: SLA for Maintenance of 1MW Solar Power at IBA Main Campus

(b) Procuring Agency's address:-Main Campus, University Road, Karachi

(c) Amount of Bid Security:- Bid Security of 2% of total amount/cost will be submitted along with Tender Documents in shape of PAY ORDER / DEMAND DRAFT only in the name of Institute of Business Administration, Karachi

(d) Period of Bid Validity (days):- Ninety Days

(e) Performance Security Deposit: Successful bidder should provide 5% Performance Security of total value of Work Order in the form of Pay Order or bank guarantee before submission of invoice. The Performance Security shall extend at least three months beyond the Date of Delivery/Completion of work / Contract.

(f) Deadline for Submission of Bids along with time :- The last date of submit the Tender Document in sealed envelope in May 15, 2024 by 3pm in the Office of the Security Office, Gate # 4, IBA Main Campus, University Road, Karachi. The Tender will be opened on same day at 3:30 PM in the presence of representatives who may care to attend.

(g) Venue, Time, and Date of Bid Opening:- Tender will be opened on May 15, 2024 on 3:30 PM at IBA Main Campus, University Road, Karachi.

(h) Time for Completion from written order of commence:- 30 days

(i) Liquidated damages:- 2% liquidated damages of the total amount will be imposed per per for which the contractor failed to complete work within the execution period.

(j) Deposit Receipt No: Date: Amount:(in words and figures) Pay Order / Demand Draft

, Amount :Rs.....Drawn on Bank..... Dated.....

Stamp & Signature

Stamp & Signature

CONTRACT DATA

Sub-Clauses of Conditions of Contract

1.1.4 **The Procuring Agency** means INSTITUTE OF BUSINESS ADMINISTRATION IBA

1.1.5 **The Contractor** means _____

1.1.7 **Commencement Date** means the date of issue of Engineer's Notice to Commence which shall be issued within fourteen (14) days of the signing of the Contract Agreement.

1.1.9 **Time for Completion:** 365 days of SLA maintenance services.

1.3 Documents forming the Contract listed in the order of priority:

- (a) The Contract Agreement
- (b) Letter of Acceptance
- (c) The completed Form of Bid
- (d) Contract Data
- (e) Conditions of Contract
- (f) The completed Schedules to Bid including Schedule of Prices including Corrigendum and Addendum
- (g) The Drawings, if any (provided by the contractor)
- (h) The Specifications

2.1 **Provision of Site:** On the Commencement Date

3.1 **Authorized person: Senior Manager Procurement**

3.2 **Name and address of Engineer's/Procuring Agency's representative.**

Mr. _____

4.4 **Performance Security:**

Amount Rs. _____ (Rupees _____ only)

Validity _____ years (_____ years)

7.2 Program:

Time for submission: Within fourteen (14) days* of the Commencement Date.

Form of program: Bar Chart/CPM/PERT

7.4 The amount payable due to failure to complete shall be 0.05% per day up to a maximum of (10%) of sum stated in the Letter of Acceptance.

8.0 Period for remedying defects

One Months (1 month)

9.0. Arbitration

Place of Arbitration: Karachi

STANDARD FORMS

(Note: Standard Forms provided in this document for securities are to be issued by a bank. In case the bidder chooses to issue a bond for accompanying his bid or performance of contract or receipt of advance, the relevant format shall be tailored accordingly without changing the spirit of the Forms of securities).

FORM OF BID SECURITY (Bank Guarantee)

Guarantee

No. _____

Executed on _____

(Letter by the Guarantor to the Procuring Agency)

Name of Guarantor (Scheduled Bank in Pakistan) with

Address: _____

____ Name of Principal (Bidder) with

Address: _____

Sum of Security (express in words and
Figures): _____

Bid Reference No. _____ Date of Bid _____

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

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying Bid numbered and dated as above for _____ (Particulars of Bid) to the said Procuring Agency; and

WHEREAS, the Procuring Agency has required as a condition for considering the said Bid that the Principal furnishes a Bid Security in the above said sum to the Procuring Agency, conditioned as under:

- (1) that the Bid Security shall remain valid for a period of twenty eight (28) days beyond the period of validity of the bid;
- (2) that in the event of;
 - (a) the Principal withdraws his Bid during the period of validity of Bid, or
 - (b) the Principal does not accept the correction of his Bid Price, pursuant to Sub-Clause 16.4 (b) of Instructions to Bidders, or
 - (c) failure of the successful bidder to
 - (i) furnish the required Performance Security, in accordance with Sub-Clause IB-21 . 1 of Instructions to Bidders, or
 - (ii) sign the proposed Contract Agreement, in accordance with Sub-Clauses IB-20.2 & 20.3 of Instructions to Bidders, the entire sum be paid immediately to the said

Procuring Agency for delayed completion and not as penalty for the successful bidder's failure to perform.

NOW THEREFORE, if the successful bidder shall, within the period specified therefore, on the prescribed form presented to him for signature enter into a formal Contract Agreement with the said Procuring Agency in accordance with his Bid as accepted and furnish within fourteen (14) days of receipt of Letter of Acceptance, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said Procuring Agency for the faithful performance and proper fulfillment of the said Contract or in the event of non -withdrawal of the said Bid within the time specified then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

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

PROVIDED ALSO THAT the Procuring Agency shall be the sole and final judge for deciding whether the Principal has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Guarantor shall pay without objection the sum stated above upon first written demand from the Procuring Agency forthwith and without any reference to the Principal or any other person.

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

Guarantor (Bank)

Witness:

1. Signature

1. _____

2. Name _____

3. Title _____

Corporate Secretary (Seal)

2. _____

(Name, Title & Address)

Corporate Guarantor (Seal)

FORM OF PERFORMANCE SECURITY (Bank Guarantee)

Guarantee No. _____

Executed on _____

Expiry Date _____

(Letter by the Guarantor to the Procuring Agency)

Name of Guarantor (Scheduled Bank in Pakistan) with address: _____

____ Name of Principal (Contractor) with address: _____

Penal Sum of Security (express in words and figures) _____

Letter of Acceptance No. _____ Dated _____

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

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

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Procuring Agency, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of the said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 9, Remedying Defects, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

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

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

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

Guarantor (Bank)

Witness:

1. _____

1. Signature _____

Corporate Secretary (Seal) _____

2. Name

3. Title _____

2.

(Name, Title & Address)

(Seal)

Corporate Guarantor

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the Agreement) made on the ____ day of ----- between Institute of Business Administration IBA Karachi, (hereinafter called the Procuring Agency) of the one part and -----(add contractor's name, address and phone ----- numbers_____ (hereinafter called the Contractor) of the other part.

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

NOW this Agreement witnessed as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents after incorporating addenda, if any except those parts relating to Instructions to Bidders, shall be deemed to form and be read and construed as part of this Agreement, viz:
 - (a) The Letter of Acceptance;
 - (b) The completed Form of Bid along with Schedules to Bid;
 - (c) Conditions of Contract & Contract Data;
 - (d) The priced Schedule of Prices/Bill of quantities (BOQ);
 - (e) The Specifications; and
 - (f) The Drawings
3. In consideration of the payments to be made by the Procuring Agency to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procuring Agency to execute and complete the Works and remedy defects therein in conformity and in all respects within the provisions of the Contract.
4. The Procuring Agency hereby covenants to pay the Contractor, in consideration of the execution and completion of the Works as per provisions of the Contract, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

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

(Seal)

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

Witness:

(Name, Title and Address)

(Name, Title, and Address)

It is hereby certified that the terms and conditions have been read, agreed upon and signed.

M/s _____

Contact Person: _____

Address _____

Tel # _____ Fax # _____

Mobile # _____ CNIC # _____

E-mail: _____