



INVITATION TO BID

FOR

DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, TESTING & COMMISSIONING
OF 35-KW ON-GRID PV SOLAR SYSTEM ROOF TOP MOUNTED AT QUAID-E-AZAM
INDUSTRIAL ESTATE OFFICE BUILDING ON TURNKEY BASIS



Head Office:

169-A/S, Quaid-e-Azam Industrial Estate
(Kot-Lakhat) Lahore

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Company (Seal/Stamp)

Electrical Engineer-QIE (Sign)

Sr. Estate Manager-QIE (Sign/Stamp)



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PART- A: INTRODUCTION

Board of Management Quaid-e-Azam Industrial has planned to get installed 35KWp Roof Top Mounted ON-Grid PV Solar system at QIE office buildings on turnkey basis.

BOM-QIE tends to invite bids from Alternative Energy development board (AEDB) registered and Pakistan Engineering Council (PEC) Licensed Companies in Solar category having minimum five years of experience in Solar and active NTN/Sales Tax registration with FBR/PRA for procurement of **"35-KWp Roof top Mounted On-Grid Solar PV System** at Board of Management Quaid-e-Azam Industrial Estate Office buildings, QIE" on turnkey basis as per technical requirement given in Part-C of this RFP.

"The Total Estimated Cost for the project is Rs. 5,873,602/-"

PART- B: INFORMATION AND INSTRUCTIONS TO BIDDERS

- 1). Bids must be submitted in two sealed envelopes.
- 2). 1stsealed envelope having technical offer be marked as **"Technical Bid"**.
- 3). 2ndsealed envelope having financial offer to be marked as **"Financial Bid"**.
- 4). Both envelopes to be placed in a 3rd sealed envelope bearing Companies' postal / email addresses and phone numbers etc. and marked as **"Bid for 35KWp Roof top Mounted On-Grid Solar PV System on turnkey basis"**. Bid should be addressed to "169-A/S Quaid-e-Azam Industrial Office Kot-Lakhat Lahore".
- 5). The project will be implemented on Turnkey basis and roof top Mounted at QIE office buildings with available clear roof top area.
- 6). 35KWp System means the 35KWp PV Modules size at Standard Temperature Condition (STC) with **3900KWH Monthly average number of units generated with 05%**

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tolerance also matching Inverters, DC/AC Cabling, AC Distribution Cabinet with all required accessory set on turnkey basis with free one year service (Labour, Spares and material). Service means the availability/visit of service person as and when required for any fault occurs in any part of the system for fault diagnosis, repair/Replacement of spares, corrective and preventive maintenance. Response time is within 24 Hours after receiving call/sms/email. Service does not include cleaning of PV modules.

- 7) Selection / evaluation of item(s) would be done according to Bids evaluation criteria given in PART-D
- 8). All bidders are to provide soft copies of design in CD / USB in addition to hard copies of technical and financial bids. **(Mandatory)**
- 9). All bidders shall provide complete BOQ as per FORM-D of this tender document (Name of each item, description of each item, Brand Name, Country of Origin, Manufacturer Name, Model and Quantity) duly signed and stamped. Complete BOQ is mandatory for qualification of bid and without BOQ bids will be rejected. BOQ must consist of Solar PV modules with cables and MC4 connectors, solar on-grid Inverters, Solar Panel Mounting structure, Combiner Boxes with AC/DC Circuit breakers, AC/DC SPDs, DC Fuses, PV DC Cables, AC Cables, AC Power Distribution Cabinet (containing circuit breakers, Contactors, control breakers, Solar PV synchronizer/controller, Manual On-OFF switch, Energy Analyzer, Voltage, Current and Power factor meters and Bus bars), Earthing conductor with lightning arrestor, Three phase multifunction smart meter device, Transportation, installation, testing and commissioning complete with all accessories. **(Mandatory)** as per Form-D and bidders will not be allowed to change brands after the bid submission.
- 10) Quality of solar system will be judged from the best organization of bid, Quality of system components, SLD (Single Line Diagram up to the point of Injection), completeness of BOQ and designed AC Injected Energy in terms of KWh per year calculated through simulation software. The design report must include shading analysis, structure analysis (with average wind dust in project area), PV modules arrays, Specific KWh/KWp, yearly AC Injected Energy (after all kinds of de-rating factors), Inverters layout/Configuration, Space required, details of Losses from PV Modules to grid Injection and payback period etc. Designed AC Injected Energy to Grid submitted by bidder through design software

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will be taken as yearly committed Injected energy and will be reflected in the contract as minimum guaranteed Energy. The energy committed will be measured on yearly basis after the installation and Bidder will pay the penalty for less energy output from its committed energy.

- 11). Financial Bid must indicate price for each BOQ item separately as per FORM-C and include all applicable taxes. Any exemptions in taxes by the federal government (where applicable) must also be indicated.
- 12). Any (Provincial taxes) other than Federal Govt. taxes shall be borne by the Bidder and should be mentioned in the bid with documentary proof.
- 13). Financial Bid must be submitted as per FORM-C of this tender document at your company letter head duly signed and stamped in separate sealed envelope:
- 14). Companies must submit earnest money / Bid security (refundable) equal to **03%** of total Estimated Cost with the Sealed technical bid in the shape of CDR/ Pay Order in favor of **PIEDMC-Quaid-e-Azam Industrial Estate Board, Lahore**. Failure to provide earnest money along with financial bid shall result in rejection of bid, without further negotiations.
- 15). Bidders must AEDB Certified Vendor and Installers having Category-C2. Bidder shall also be valid authorized dealer (since last minimum 5 years) and importer of all major equipment (i.e. Solar Panel, Solar Inverter etc.) and submit the valid authorization letters from each manufacturer of solar system component authorizing the bidders to submit bids against this tender document.
- 16). Bids must have validity of at least 120-days.
- 17). Solar PV modules must be of Grade-A, Tier-1 with minimum 12-years replacement warranty and 25 to 30 years power performance warranty with annual degradation of not more than 0.45% excluding first year, Inverters should have minimum five years warranty and rest system should have minimum one year warranty with free labour and parts.
- 18). Selected Bidder shall provide "Performance Guarantee (PG)" equal to **10%** in favor of **PIEDMC-Quaid-e-Azam Industrial Estate Board, Lahore** of the contracted value/ Quoted amount in the form of CDR/Pay order valid at-least for duration of one year warranty period upon signing of contract.
- 19). Bidders will provide manufacturer's International insurance warranty from world reputed Insurance Company against 12-years product warranty and 25 to 30 years linear output

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power performance warranty of the solar PV modules.

20). Technical Bid must include following documents

- a. Valid PEC registration Certificate of atleast C5 or above category.
- b. Valid Alternative Energy Development Board (AEDB) atleast C2 or above category registration certificate / license.
- c. Valid Income and sales tax registration certificates.
- d. Year 2022-2023 Audited report only. (No other year is allowed).
- e. Income tax returns for year 2022-2023 only. (No other year is allowed).
- f. Company profile (Original or color print).
- g. List of 35KWp or above projects (On-grid Solar PV Plants) completed in last three years with date of completion and name of the customer with address, Cell and phone contact with email address as per Form- B.
- h. Declaration/Undertaking on stamp paper that they are not blacklisted by any organization in Pakistan and that no litigation is currently under way against them.
- i. At least five trained graduate engineers having more than three years experience of working on Solar PV Plant and copy of valid membership card of Pakistan Engineering Council (PEC) (**Mandatory**).
- j. System design report generated through solar PV simulation software year wise AC energy Injection in Grid.
- k. Forms A, B, C and D duly filled and stamped.

21). **COST EFFECTS:** The bid price shall be mentioned as per accounting unit in Pak Rupees for Invoice as per FORM-C. The bid price inclusive of all applicable taxes must be considered as final price as no price variation will be accepted after bid opening. Bidder will be responsible for the design, supply, installation, testing, commissioning and installation of Net Metering, warranty, training and after sales services as per PART-C of this tender document.

22). Tender document cost of **Rs.3000/-** as Pay Order of non-refundable in favor of **PIEDMC-Quaid-e-Azam Industrial Estate Board, Lahore.**

23). The delivery will be on DDP (Delivery Duty Paid) basis as per Incoterms 2017.

24). Annual Maintenance charges should be quoted after sales free service period of one

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year. Maintenance after one year warranty will include visit and troubleshooting charges without parts.

- 25). The completed work will be verified as per tender document. Some Salient verifications/measurements are as follows:-
- Complete Documentation as per tender document.
 - Quality of System Components, Quality certifications, Energy commitment, Quality of system design report, Authorizations from manufacturers, Quality of workmanship during installations, Solar Mounting structure design and materials, Service Workers and Engineers Behavior at work, Quality of interactions of staff of the bidders with BOM-QIE Staff and labeling and tagging of cables.
 - Compliance with bid specifications and tender document terms.
- 26). If the selected Bidder fails to complete the order or delays to supply within the quoted delivery time or extended time given by competent authority QIE or supply substandard equipment, BOM QIE may;
- Purchase single, all or unsupplied quantity of item(s) as the case may be on Bidder's **Risk and Cost.**
 - Forfeit Performance Guarantee.
 - Initiate administrative action.
 - May recommend to Competent Authority for Black listing.
- 27). Only one Representative from each bidder would be allowed to witness the opening of bids, without conferring any privileges. No mobiles phones / recorders would be allowed inside the bid-opening room.
- 28). **Contract Agreement** shall be assigned with the successful bidder, as per BOM QIE policy. The provision of stamp paper (Rs.100/-) shall be the responsibility of successful bidder which shall be delivered to BOM QIE for award of contract within 7 days of issuance of letter of Intent.
- 29). In case of dispute, decision of Competent Authority BOM QIE shall be final and binding on both the parties.
- 30). Bidder shall be responsible for all the clearances and transportation of equipment up to/ within BOM QIE premises and provisioning of loading/ un-loading labor would be the responsibility of the Bidder.

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- 31). Subletting/Joint Venture (JV)/Consortium is not allowed by the bidder and it will lead to disqualification of the bid without any hearing or representation from the bidder.
- 32). Submission of Bid / bids through email / fax is not admissible.
- 33). Bids cannot be withdrawn after submission.
- 34). The supplied items must have service and operations manuals and operating software for the components of the system.
- 35). Bids shall be rejected if BOQ and Prices quoted are incomplete, unclear, conditional, altered or ambiguous.
- 36). Bids shall be rejected if required detail of specifications, brand, origin, make, model, warranty, free service etc. are not clearly quoted / mentioned. No margin shall be given on this account.
- 37). Late submissions would not be entertained at any cost.
- 38). Moreover, tender document is only an invitation to offer Bid / bids. The competent authority may reject all Bids or cancel the tender document.
- 39). (i) BOM QIE will try to arrange for storage place for equipment (it is not a Commitment and depends upon availability of space)
(ii) Security & safety of all equipments will be the responsibility of bidder.
- 40). **Delivery and installation period:** The delivery/installation/testing/commissioning time should not be more than 2 to 3 weeks after signing of contract (Net metering Exemption). Total project duration including net metering should not be more than **02 months** after signing of contract. (Relaxation may be granted as per merit of the case).
- 41). **Penalty and late delivery:** In the event of any delay in installation/commissioning beyond 02-months, the Bidder shall inform to BOM QIE before expiry of such period giving reasons / justification for delay. However, purchaser reserves the right to take following actions:-
 - a. Evaluate the request for extension in delivery period as per its merit and may consider extension in delivery period or otherwise.
 - b. In case of late delivery for the reasons well within control of the Bidder, liquidation damages at the rate of 1% per week but not exceeding 10% of the total value of the undelivered stores / items may be levied.
 - c. May cancel the contract.

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d. The purchaser's decision under this clause shall not be subjected to arbitration.

- 42). **Inspection and testing:** The Inspection Committee of BOM QIE will inspect and test the supplied Items as per tender document after arrival at the warehouse and premises. All applicable tests would be conducted in the presence of BOM QIE team and test reports if required would be signed by both the parties and submitted to BOM QIE representative. Any inspection out of QIE Premises will be done by QIE team at expenses of the bidder.
- 43). **Terms of payment:** No advance payments would be made. However, following payment terms and conditions will be applicable on mutual agreement:-
- a) 50% of the total amount will be released on delivery of equipment having worth of 70% of total contracted / Quoted amount at construction site after work order verification by the respective committee, QIE.
 - b) 30% of the total amount will be released on successful installation, inspection, testing (Net metering exempted) and checking of the equipment duly endorsed by BOM-QIE evaluation committee / Board of officers.
 - c) 10% of the total amount will be released on successful commissioning (including net metering) & training of the equipment duly endorsed by BOM-QIE evaluation committee / Board of officers and upon successful handover of system to client.
 - d) Remaining 10% of the total contracted value / quoted amount will be kept as surety money & will be released after 01 year whole system with free service & Maintenance (labour and parts) also subject to achieving specific annual yield as mentioned in contract.
 - e) Payments will be made through cheques after deduction of necessary applicable government taxes/duties against Invoice by the Bidder.
- 44). **Bid receipt and opening: Single stage – two envelop** would be adopted for opening of the tenders. Sealed envelope must reach on mentioned address 169-A/S Quaid-e-Azam Industrial Office Kot-lakhat, Lahore by **10:30A.M on 03.04.2024 Wednesday**.
- 45). Written queries will be addressed till three days before the bid submission time.
- 46). Technical bids will be opened in the presence of representatives of the Bidders and members of BOM-QIE purchase / evaluation committee at 169-A/S Quaid-e-Azam

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Industrial Office Kot-lakhpat, Lahore by **11:00A.M on 03.04.2024 Wednesday**. Whereas the date and timing for opening of financial proposals shall be communicated later on to technically qualified Bidders/distributors.

- 47). The bid opening may be postponed under unforeseen circumstances. However, in such a case, client will notify all the bidders well in time and communicate next date and time.
- 48). For queries (if any), Companies may contact during office timings or at telephone numbers 042-99330357-59.
- 49). **Warranty:** Bidders shall provide minimum One year warranty of the whole system with free service (labour and parts) in addition to different warranties of the solar PV modules and Inverters and warranties shall be effective from the date of successful installation and commissioning of the equipment. Whole system warranty will be on Bidders letter head along with warranty certificates from manufacturers for all system components. Bidders will be responsible for all repair works with parts on its own arrangements and expenses during the warranty period. Bidders will deposit manufacturers' international insurance guarantee of Solar PV Modules against 25-30 years linear output power performance.
- 50). **Certifications:** The Bidder will provide flash report of solar PV modules and complete test report from accredited Lab of quoted solar PV modules as per IEC Standards 61215 and 61730 latest editions, IEC Certifications of Inverters mentioned in the tender document and all certifications mentioned in the tender documents for all other components. Bidder will provide certificate of origin issued at manufacturer's letter head for solar PV modules and Inverters. Purchaser shall have all the rights to get tested or verified from Laboratories any system component as per standards mentioned in the tender.
- 51). **After Sales Service:**
- a). Bidder will guarantee the availability and the supply of **Essential Maintenance Spares** required to keep the equipment operational for a period of 25-30 years.
 - b). Bidder will provide 05-years inverter warranty from the date of installation.
 - c). The Bidder would provide free up-gradation of software or improvements enhancing the efficiency of the system during warranty period.

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- d). Bidder will guarantee AC Injected energy output in KWh per year as per energy shown in their design report at full load/power evacuation (Full load means Inverter rated Power) and this energy will be calculated per year by accounting for quoted performance degradation but not exceeding 0.45% annually (excluding first year)
- 52). **Taxes:** Bids should include all the government applicable taxes/duties and have GST and other taxes in their bids.
- 53). **Repeat Order:** If required, BOM-QIE may place a repeat order (at previous rates and conditions) for the supply of contracted item(s), during a period of six (06) months after the issue of purchase order/contract amounting not more than 15% of the total value of the contract.
- 54). **Packing & Transportation:** All Equipment shall be individually packed in standard packing provided by the manufacturer for onwards transportation and delivery. Any item damaged during transportation will be replaced by the bidders at their own cost including freight and insurance charges.
- 55). **Default:** If the bidder fails to effect or keep in force any of the insurances referred to in the contract or fails to provide satisfactory work to client may, without prejudice to any other right or remedy, terminate the Contract and cancel contractor rights or remedy to recover the amount paid in advance (if any). If the Bidder fails to deliver items/ services as per tender document, client (BOM-QIE) reserves the right to terminate the contract.
- 56). **Technical / User manual:** Successful Bidders will be bound to provide technical and operational manuals to BOM-QIE office at the time of delivery.
- 57). **Tool Kits / Accessories / Operations & Maintenance Manuals:**
Standard sets of General Tool kit / accessories/ Operations and Maintenance manuals of the equipment shall be supplied by the bidder along with equipment within the quoted price.
- 58). **Arbitration:** In case of any dispute, case shall be reviewed by "BOM-QIE procurement Committee" and competent authority BOM-QIE shall be final and binding on both the parties without recourse to legal action.

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- 59). **Litigation:** In case of any un-resolvable dispute only court of Law shall have the jurisdiction to decide the matter.
- 60). **Force Majeure:** The Bidder shall not be held liable in the event of their failure to comply with the delivery schedule of the ordered items(s) for reasons of Force Majeure including but not limited to: war and other instabilities invasion, act of foreign enemies, mobilization or embargo, civil war etc.
- 61). **Grievances:** Grievances (if any) by any bidder may be sent / addressed to Sr. Estate Manager, QIE at following address to 169-A/S Quaid-e-Azam Industrial office kot-lakhpat, Lahore within 05 to 07 working days after results announcement.
- 62). **Evaluation Criteria:** Criteria will be as per PART-D of this tender document.
- 63). **Irrelevant Documents:** Any irrelevant document beyond tender requirement will be considered as negative and may lead to rejection of bid.
- 64). **Training Period:** During Service & Maintenance period of one year, the bidder will be responsible to train the QIE relevant staff for operating of the system prior to handing over the project to BOM-QIE.

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PART- C: TECHNICAL SPECIFICATIONS / REQUIREMENTS

SOLAR PV SYSTEM

35KWp (Rated PV Capacity at STC) roof top Mounted On-Grid solar PV System on turnkey basis to be installed on QIE Office buildings. Inverters design should be compatible with solar PV arrays. A complete Single Line Diagram (SLD) from PV Modules to Injection must be given. System must be net metering compliant fulfilling all the requirements of net metering SOPs of local DISCO and NEPRA SRO 892(1)/2015. The system must be complete with protections devices (earthing, anti-islanding, AC/DC disconnects, manual switch, Lightning arrestors, surge protection), solar mounting structure at concrete pads at roof mounted civil work for concrete foundation will be responsibility of the Bidder, AC Power distribution Cabinet, PV Synchronizer etc. AC Power Distribution cabinet must house all the AC contactors, Bus bars, manual switch, Breakers, solar energy meter (must be tested by Accredited Lab with report), Voltage, Current and Power factor meters etc. System must be capable of remote monitoring of energy parameters at LAPTOP and Mobiles. System must be complete with all components and accessories. Bidder will be responsible to provide the list of equipments capable of repair / not repair.

SOLAR SYSTEM COMPONENTS

SOLAR PV MODUELS

- Solar Panel N-Type Technology will be half cut Mono PERC Technology.
- Solar PV modules should be Grade-A, Tier-1 type as per Bloomberg List.
- Each PV module shall be 580~585W MONO PERC Half Cut N-Type Technology.
- The modules must have efficiency not less than 22.6%.
- Power Degradation Factor not more than 0.45% annually after first year.
- Modules must be TUV Rhineland certified as per IEC standards 61215 and 61730 latest edition.
- Modules should be free of PID and must include PID free certificate.
- Minimum 12 years replacement warranty and 25-30 years Linear Output power performance warranty

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- International insurance Guarantee against 25-30 years linear output power performance.
- Array configuration must be compatible with Inverters and vice versa. PV to Inverter downsizing may not be more than 20%.
- PV panels with tilt angle between 07~20 degree.
- Size of total PV modules: Not less than 35 KWp at STC.
- Flash Test report and Module Test report as per standards 61215 and 61730 should be provided at the time of supply.
- Must be supplied with connected cables and MC4 connectors.
- Preferred brands will be Jinko N-Type, Canadian Solar, Longi or Approved Equivalent
- Annual degradation should not be more than 0.45% annually after first year.

SOLAR ON-GRID INVERTERS

- Type of Inverters = Three phase Grid Tied String Inverters
- 05 years warranty from the date of installation
- Make: USA/EUROPE/CHINA (Preferred brands will be Huawei, Goodwe, Fox ess, Solis or Approved Equivalent)
- Size of each Inverter: Atleast 40KW or above of Nominal AC Output power.
- PV to Inverter downsize ratio should not be more than 20%.
- Maximum Efficiency: not less than 98.7%. Total Harmonic Distortion: Less than 3%
- Max. Current per MPPT 22A, Max Isc per MMPT 27A, Max. Output Current 80A
- Standards compliance: UL 1741, IEC 62109-1/2, IEC 62116, IEC 61683 and IEC 61727
- Degree of protection: Minimum IP 65
- Built with data logger, wifi stick, communication interfaces protections and remote monitoring capability. Online monitoring with compatible three phase smart energy meter
- Solar Inverter should be with lock and key provided by bidder.
- 3-phase On-grid Solar Inverter with compatible three phase multifunction smart meter device.

SOLAR MOUNTING STRUCTRE

- Rust proof red oxide with enamel painted (Masters, Nippon, Brighto or approved equivalent) roof top mounted elevated structure with proper concrete footing civil blocks of (1.5x1.5x2) Ft with Labour work.
- Structure must withstand at 130 KM/Hr wind load.

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- Nuts, Bolts, Washers and other supporting must be of stainless steel with appropriate gauges as per design with rust proof capability.
- Design and Drawing of Structure must be provided for approval before execution.
- Undersized gauge is not allowed. PV panels with tilt angle between 07~20 degree.
- Preferred brands will be Mughal, Amreili, itefaq, Btala or approved equivalent 12 gauge atleast H/I Beam Girders with C/U Channels (H+U) red oxide with rust proof enamel paint also proper base plate with proper anchoring nut bolts etc
- Bidder shall also provide the foundation/footing details (1.5x1.5x2) for super structure.

COMBINER BOXES

Must be manufactured with powdered coated, GI material with 99.99% pure copper strips in it for termination of PV arrays. Must comply with IP 65 and must house breakers.

MC4 CONNECTORS

Qty: As per design

Current rating: As per design (atleast 250-A, 4-Pole water proof external disconnect switch with Distribution Box Preferred brands will be original Schneider, ABB, Siemens, Terasaki or approved equivalent)

Ingress protection: IP 66

Standard Compliance: EN 50521:2008

REMOTE MONITROING

System must have capability for remote monitoring complete with communication interfaces, data logging and software. Successful bidder has to configure the whole system and show monitoring at Laptop or PC the parameters like Load watts, PV watts, DC energy and AC Injected energy, Panel temperature, wind speed, data graphs and patterns etc.

CIVIL WORK

Civil work for mechanical structure placement will be the responsibility of the bidder. Walkways of Appropriate width and height shall be provided between solar panels arrays.

MANUALS

The successful bidder will supply all the services and maintenance manuals in hard and soft copy of each component of the system along with the supply.

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SYSTEM PROTECTIONS

- 1) System must be completed with all protections including DC and AC Disconnectors, DC/AC Surge protection, DC Fuses, lightening arresters, Grounding/Earthing etc.
- 2) **Surge Protection:**
 - i. Surge protection shall be provided on the DC side and the AC side of the system.
 - ii. The DC surge protection devices (SPDs) shall be installed in the DC distribution box adjacent to the solar grid inverter. DC Fuses as well.
 - iii. The AC SPDs shall be installed in the AC distribution Cabinet.
 - iv. The SPDs earthing terminal shall be connected to earth through the above mentioned dedicated earthing system.
 - v. The Lightning arresters with Copper rod with atleast 10/16mm bare copper conductor need to be provided with proper earthing bore atleast 45 to 50feet with earthing powder and wire.

EARTHING PROTECTION

Three separate dedicated and interconnected earth electrodes must be used for the earthing of the solar PV system support structure with a total earth resistance not exceeding 03 ohms as below:

- (i) Equipment earth (DC) with proper DC bore (45 to 50feet)
- (ii) System earth (AC) with proper AC bore (45 to 50feet)
- (iii) Lightning arrester with proper earthing bore. (45 to 50feet)

Both equipment earth (DC) and system earth (AC) shall be checked for proper earthing.

Equipment earth (DC): All metallic parts such as Structure of PV modules, DCDB, Panels and Distribution boards will be connected to earth with two separate and distinct earth connections to avoid any loss of property or Human being.

NET METERING

Solar system must comply with the SRO 892(1) 2015 and DISCO SOP for net metering. Successful bidder will process the net metering license as per DISCO SOPs and NEPRA SRO after the complete installation. Bidder should include all expenses for net metering as separate head under services in FORM C. Bidder must have net metering permission License from AEDB. BOM-QIE will provide assistance in this regard.

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PV DC CABLES

- 99.99% copper cables with conductor withstanding at temperature of 90 Degree.
- Cables must be double insulated suitable for 1.5 KV DC Transmission.
- Weather resistant, UV resistant, Ozone corrosion resistant, halogen free and flame resistant.
- XLPE 6mm Insulation withstanding temperature range from -4 degree C to 90 Degree C.
- Test reports namely Conductor DC resistance test, Insulation resistance test, High Voltage Test, Pressure test and spark test must be provided.
- Preferred brands for AC/DC Cables will be New-age, GM Cable, FR, Fast cable or approved equivalent.

AC POWER DISTRIBUTION CABINET

- 99.99% 4-C, 50mm sq copper cables will be New-age, GM Cable or approved equivalent. AC Power Distribution cabinet must contain AC 4-Pole, 250-A original circuit breakers (Schneider, ABB, Siemens, Terasaki or approved equivalent, contactors, bus bars, energy analyzer and main switch with monitoring of Voltage, current, Power, Energy and power factor. The components must of high quality complying with national standards of switchgears.

INJECTION OF ENERGY

Energy will be injected at 440V Distribution panel available but the bidder has to supply AC distribution cabinet with built-in protection, automatic and manual isolation from the distribution circuit.

35KWp On-Grid Roof Mounted PV Solar System, QIE Office Building

Items	Description	Qty.	Remarks (Yes/No)
Tier 1 Grade A Solar Panels	Solar Panels 580~585W Mono Perc Half Cut-Cell N-Type technology, PV Capacity: ~35KWp Jinko N-Type, Canadian, Longi or approved equivalent (12-years replacement warranty)	60-61 Panels	
NEPRA Fee	NEPRA License Fee ~35KW On-Grid System	Job	

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Net-Metering	Ct 3-Phase Bi-Directional Meters + Accessories + Documentation (Complete Application/ Documentation as per NEPRA Requirements)	Job	
PV Inverter	3-Phase On-Grid Solar Inverter atleast 40KW or above (05-years warranty) with smart Wifi stick also three phase multifunction Smart CT Meter device. Huawei, Goodwe, Fox ess, Solis, or Approved equivalent	Job	
Protections	AC/DC Circuit breakers, SPDs, DC fuses + Earthing Wire (Panel to Panel Earthing Cable Pit to frame & DC-SPD) + Inverter Earthing Cable (Pit to inverter & AC-SPD) + boring equipment with 45 - 50ft bore + Lightning arrester + 10mm/16mm Bare copper Conductor (Pit to LA) earthing bore, earthing powder, wire) *3	Job	
Solar Panel Frames	12-Gauge H-Beam Girder Elevated Structure 7 to 20degree tilt with C/U Channel (Mughal, Amreili , itefaq, Btala or approved equivalent) Framing H + U channel red oxide enamel paint rust proof paint (Masters, Nippon, Brighto or approved equivalent) also proper base plate with proper anchoring S.S nut bolts etc for 60-61 Panels/Modules excluding spacing. Drilling in Roof Core.	Job	
MDS	4-Pole, 250A original Water proof External Disconnect switch Distribution box with Accessories MC4 Connectors (IP66)	Job	
Other Items	99.99% pure Copper AC 4 core 50mm sq insulated wire, 6mm XLPE Copper DC insulated Wire (New-age, GM Cable or approved equivalent) 4-Pole AC / DC 150-A original Circuit Breakers (Schneider, ABB, Siemens or approved equivalent), AC+DC SPDs + DC Fuse (Schneider, CNC, GADA or approved equivalent) DB, UPVC (Popular, Adamjee, or approved equivalent) , Proper Ducting, Flexible Pipes, Insulation tapes, Thimbles Etc.	Job	
Service Charges	PV Installation, testing and commissioning	Job	
Civil Work	Complete Civil Work including footing (1.5 x 1.5 x 2.0)ft	Job	
Transportation	Transportation including labour/services	Job	

Note: Items specifications have been mentioned in PART – C, Technical Specifications / requirements.

Company (Seal/Stamp)

Electrical Engineer-QIE (Sign)

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PART- D: EVALUATION OF BIDS

Bids shall be technically evaluated as per the following Technical evaluation criteria. One part is mandatory without which the bids will be rejected without further evaluation:

Sr.	Evaluation Parameters	Status	YES/NO	Remarks if any
A - MANDATORY ITEMS – NON-NUMBERED *				
1	COMPLETE BOQ*	Yes/No	-	
2	SYSTEM DESIGN AS PER TENDER DOCUMENT*	YES/NO	-	
3	SYSTEM DESIGN REPORT WITH year wise INJECTED AC ENERGY*	YES/NO	-	
4	DATASHEETS AS PER SPECIFICATIONS (Clearly readable)*	YES/NO	-	
5	AUTHORIZATION LETTERS FROM MANUFACTURERS FOR EACH ITEM*	YES/NO	-	
6	Warranty of each system component and total system*	Yes/No	-	
7	Valid Income. Tax & Sales Tax Registration Certificates*	Yes/No	-	
8	Earnest Money / Bid Security received (03% of Estimated Cost)*	Yes/No	-	
9	Provision of Non Black Listing record on company letter head duly signed and stamped on company letter head*	Yes/No	-	
13	AEDB C2 Category or above license, PEC atleast C5 Category or above Certificates*	Yes/No	-	
BIDS WILL BE DISQUALIFIED IF ANY OF ABOVE ITEM IS MARKED "NO"				
B	NUMBERED ITEMS	Obtained	Total	
14	Solar PV Module TIER Grade-A		15	15 Number for TIER-1 as per Preference given–5 for other Tier-1. As per Bloomberg List and zero for others
15	INVERTER MAKE		15	15 Number for Inverter as per preference given and 05 for others. EUROPE/USA/CHINA and zero for others

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16	NUMBER OF GRADUATE ENGINEER WITH VALID PEC CARD HAVING MORE THAN THREE YEARS EXPERIENCE		10	10 – Five Graduate Engineers with three years' experience (2 for each engineer) and 05 marks for less experience
17	Support Offices		10	10 for local office in Islamabad or Lahore and 05 for office outside Islamabad/LHR
19	Literature (Datasheets) provided as per BOQ		10	10 for complete and 02 for incomplete literature.
20	35-KWp or above Solar On-grid PV Projects Completed successfully with attached Performance / Completion certificates or any authentic proof		10	10 for five Projects and zero for others.
22	PEC atleast C5 Category or above and AEDB C2 Category or above License Certificate		10	10 for certified and zero for non-certified
23	Company Experience from the date of its incorporation		10	10 for 05 years and zero or others
25	Financial Position (Audited Statement for 2022-2023)		10	10 for 2022-2023 audited and 0 for non-audited Accounts
Total Technical Marks			100	
Minimum Technical Qualification Marks			75	
Marks Obtained				

NOTE:

- Parameters marked as * are mandatory. Failure to compliance with any mandatory parameter may lead to disqualification of bid.
- Any Bidder which qualifies technical criteria will be considered for financial bid opening. However, lowest quote Bidder, financial bid will finally be considered for award of contract agreement

Company (Seal/Stamp)

Electrical Engineer-QIE (Sign)

Sr. Estate Manager-QIE (Sign/Stamp)



PART- E: FORMS TO BE SUBMITTED

FORM-A

At company letter head

PROPOSAL SUBMISSION UNDERTAKING

**To: Sr. Estate Manager,
Board of Management,
169-A/S, Quaid-e-Azam Industrial Estate Office, Kot-Lakhpatt Lahore**

Dear Sir

1. We, the undersigned, offer to provide our services for "35KWp Roof top Mounted On-grid Solar PV System" in accordance with your tender Document Number **01-QIE / SOLAR / 35KWp** dated_____. We are hereby submitting our proposal, which includes technical as well as financial proposal as per instructions.
2. We hereby acknowledge and agree to all terms, conditions, special provisions, and instructions included in the above-referenced tender document.
3. We understand and agree that the decision of the procurement / evaluating committee shall be final and cannot be challenged on any ground at any forum and the procurement / evaluating committee will not be liable for any loss or damage to any party acting in reliance thereon.
4. Furthermore, we hereby certify that, to the best of our knowledge and belief: -
 - a. We have no close, financial or familial relationships with any BOM-QIE staff members.
 - b. We have no close, financial or familial relationships with any other bidder submitting proposals in response to the above-referred tender document.

Company (Seal/Stamp)

Electrical Engineer-QIE (Sign)

Sr. Estate Manager-QIE (Sign/Stamp)



- c. The prices in our offer have been arrived independently, without any consultation, communication, or agreement with any other bidder or competitor for the purpose of restricting competition.
 - d. All information in our proposal and all supporting documentation are authentic and accurate.
 - e. We understand and agree to BOM-QIE prohibitions against fraud, bribery, and kickbacks.
5. We hereby certify that the enclosed representations, certifications, and all other submitted documents / statements are accurate, correct, and complete.

Authorized Signature and stamp

M/s (Bidder's Name)

Dated

Company (Seal/Stamp)

Electrical Engineer-QIE (Sign)



Sr. Estate Manager-QIE (Sign/Stamp)



FORM – B

LIST OF 35KWP AND ABOVE ON-GRID SOLAR PV PROJECTS COMPLETED IN PAKISTAN
MANDATORY FOR LAST 03-YEARS

<u>Name of Project</u>	<u>Project site Location</u>	<u>Client Name</u>	<u>Contact Nr (Cell and Landline)</u>	<u>Client Complete address</u>	<u>Date of Completion</u>

NOTE: No project other than PV Plant of less than 35KWp

Company (Seal/Stamp)

Electrical Engineer-QIE (Sign)



Sr. Estate Manager-QIE (Sign/Stamp)



FORM -C

Date: _____

Sr. No.	Item	Description	Unit	Quantity	Make and Model	Country of Origin	Unit Rate Without Taxes Including Installation, Testing and Commissioning charges (PKR)	Unit Rate Inclusive of Taxes Including Installation, Testing and Commissioning charges (PKR)	Total Amount Including Installation, Testing and Commissioning including all applicable taxes/duties/charges (PKR)
EQUIPMENT									
SERVICES									
							Total (PKR)		
							Grand Total (PKR)		

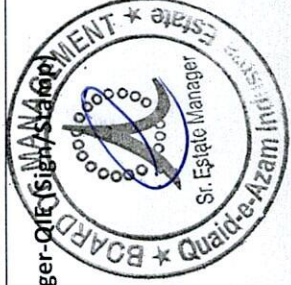
NOTE:

1. This document is not a commitment to purchase on the part of the BOM-QIE.
2. Quoted price should be inclusive of all applicable Government taxes and duties.
3. Delivery on (Delivery Duty Paid) DDP basis with Supply, installation, testing, commissioning, free service and warranties
4. Bid Validity in Days: 120 Days
5. Complete Installation, testing & commissioning of PV project time: One month from the issuance date of Work-Order.
6. Delivery Location: **Plot # 169-A/S, Quaid-e-Azam Industrial Estate Office, Kot-Lahpat Lahore**
7. Free service of One year included.

Company (Seal/Stamp)

Electrical Engineer-QIE (Sign)

Sr. Estate Manager-QIE (Sign)



<p>8. Vendor Name, Signature & Stamp :</p>
<p>Vendor Address :</p>
<p>Contact No. & E Mail Address :</p>
<p>Note: Please sign and stamp all pages and mention the delivery time against items.</p>

FORM – D (BOQ)

<u>Description of Item</u>	<u>QTY</u> <u>Nr/Set</u>	<u>Manufacturer Name</u>	<u>Brand/Model</u>	<u>Country of</u> <u>Origin</u>	<u>Local/Imported</u>	<u>Warranty</u>

Company (Seal/Stamp)

Electrical Engineer-QIE (Sign)

Sr. Estate Manager-QIE (Sign/Stamp)



