

NATIONAL LOGISTICS CORPORATION
INVITATION TO TENDER FOR SUPPLY, INSTALLATION AND NET METERING
OF SOLAR SYSTEMS 1 MW (ON-GRID) AT NLC LOG PARKS
(KARACHI, LAHORE AND RAWALPINDI) ON FOR BASIS
UNDER PPRA RULE 36 D - TWO STAGE TWO ENVEOPLE BIDDING PROCEDURE
INSTRUCTIONS TO TENDERERS - WORDS OF CAUTION

1. **Participants**. The tender can be participated by experienced companies meeting the NLC Eligibility Criteria as per following: -
- a. **AEDB registered** firm having **Category C-1 (Up to and above 500 KW)** for Solar On Grid / Off Grid and Hybrid application.
 - b. Firms having valid **PEC membership Category C2**.
 - c. Firms having substantial experience of turnkey solar projects of 1 MW or above at various locations of Pakistan.
 - d. Authorized dealers of Tier 1 OEMs having Backup Support Services in Pakistan.
2. **Eligibility / Bid Qualification Criteria**. The bidder must prove eligibility by completing the Bid Qualification Criteria, as following:-

Ser	Check List	Yes / No
a.	Tender Fee	
b.	Bid Security	
c.	Valid AEDB Registration Certificate - Category C-1	
d.	Valid PEC Membership required Category C2.	
e.	Copy of NTN / STRN and Active Tax Filer with 100% compliance	
f.	Authorization Letter from OEM (for dealers)	
g.	Complete Tech Data of Equipment	
h.	90 x Days Offer Validity	
i.	Delivery Period at Log Park (Karachi, Lahore & Rawalpindi):- (1) Supply & Installation - 120 x Days (2) Net Metering within 60 x Days after installation	
j.	Comparison Chart with user proposed specification (Annex "A") Response to all queries/requirements in full	

k.	Non-Blacklisting Certificate (Original) on e-Stamp/ affidavit of Rs 100	
l.	Certificate to accept all conditions of tender without exception	
m.	List of Major Clients	
n.	Hierarchy of the firm along with portfolio of owner & top management be attached	
o. *	Firm must have experience of minimum 7 - 10 x years of Solar Installation with at least 10 x commissioned projects in this period of minimum capacity 1 MW. Details be attached duly supported with user feedback.	
p. *	Last 3 x years Average Accumulative Turnover of Firm should be Rs 3,000 Million or above. Audited report of last 3 x financial years including 2024/25 will be attached with Technical Proposal.	
q.	After in depth survey of site design with drawings be provided for installation and commissioning of solar system at specified sites incorporating following:- (1) Site layout, solar installation points, backup requirement, user's needs and expectations. (2) Load calculation with listing of electric appliances. (3) Duty cycles, peak loads etc (day / night). (4) Solar cost benefit analysis. (5) Net metering and interface requirements from the DISCOs. (6) Design (High & low Level)	
r.	OEM authorization for quoted Inverters	
s.	List of Technical Manpower held by firm on active list as on 30 Jun 2026	
t.	SCADA Monitoring System with separate cost	
u.	Hot -Dip Galvanized Structure (HDG)	

3. **Special Conditions**

- a. Quoted items / equipment should be Brand New.
- b. In case of importer, the firms will provide all relevant import documents to the purchaser.
- c. Offers must be accompanied by the schedule to tender duly completed / signed by authorized executive of the firm without which the offer will not be entertained.
- d. Authority letter from manufacturer in favor of bidder to participate and submit the bid, otherwise the bid shall not be considered.

- e. Bidder to furnish reference list of customers giving details (company name, contact person, email address and Cell phone number) to whom similar Solar Systems have been supplied.
- f. In case of default of firm, the Bid Security will be confiscated and punitive action will be taken against firm.
- g. Firm will provide a detailed schedule for the supply, installation and net metering of the solar system of the relevant site for smooth functioning after award of Letter of Intent/ Contract Agreement.
- h. **Stamp Duty**. The firm will deposit 0.25% amount against total value of the contract. This stamp duty is imposed by Govt of Pakistan as per Stamp Duty Act 1899 and it is responsibility of contractor / firm to deposit stamp duty.
- i. **Partial Bidding**. Firm can quote in one or more projects.

4. **Solar Equipment and after Sale Support**

- a. Solar panels should be of latest proven technology most suitable for the site.
- b. Solar System should be marked with manufacturer brand name, model no and capacity.
- c. The bidder should have reliable monitoring mechanism (NOC) 24/7 for any solar fault removal at site.
- d. Availability of Solar Parts after sales and service in Pakistan has to be ensured for at least 10 x years.
- e. Bidder to furnish complete technical printed details and original brochure published by manufacturer in English, photo copies shall not be accepted.
- f. The type of equipment quoted with relevant specifications will be marked on brochure and duly signed in case the brochure caters to a generic product.
- g. Complete technical details of the quoted machine/model should be available on official website of manufacturer.

5. **1st Pre-Bid Meeting**. First pre-bid meeting will be held at HQ NLC, Harding Road Support Branch Conference Room on **3 Jul 2026** at **1100** hours to clarify any queries. During meeting each prospective bidder will be required to deliver an introductory presentation of 5 to 10 minutes duration on its eligibility for the task and company profile.

S/No	Location	Contact
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a.	Karachi Northern Bypass, NLC Logistics Park, Karachi	Mr. Khilaid Seth (SPM) 0311-8597664 Mr. Noman Akram sheikh (DPM) 0333-3310893
b.	Nathay Khalsa, NLC Logistics Park, Lahore	Lt Col Waqas Raza (SPM) 0313-4422444 Mr. Aamir Ali (APM) 0318-6530898
c.	Rawat Chakbeli Road, Kalla Kotha Harraka, NLC Logistics Park, Rawalpindi	Lt Col Kamran Iqbal Bhatti (SPM) 0333-1276677 Mr. Khan Faizan Bin Altaf (DPM) 0315-5090663

6. **2nd Pre-Bid Meeting.** Second pre-bid meeting will be held at HQ NLC, Harding Road Support Branch Conference Room on **8 Jul 2026** at **1100** hours to discuss modalities of the project or to clarify any queries.

7. **Technical Proposal.** Technical proposal for Karachi, Lahore and Rawalpindi sites will be submitted separately for Solar System 1 MW as per PPRA guidelines. Each site will be evaluated separately as a separate project. **NO PROPOSAL WILL BE ACCEPTED WITHOUT SURVEY OF SITE.**

a. Installation of Net-Metering & allied technical requirements, capacitor bank etc. from the DISCO and processing of required approvals for NLC Log Parks (Karachi, Lahore & Rawalpindi) is the responsibility of supplier, within specific completion time.

b. Mechanism to get optimum use of PV generation (from installation date till net-metering is functional) should be included in the proposal through zero export device etc.

c. All surveys, technical proposals and their revision will be on “no cost no obligation basis”.

d. The firm will submit a separate technical proposal for each site, which will be evaluated independently.

e. Cost benefit analysis and payback period with backup calculations for each location.

f. Firms must attach all required documents as per Check list (Para 2) with the technical proposal (compulsory).

8. **Financial Proposal.** The firm must give price breakdown of each component, assembly line items, net-metering with aggregate price, interface and allied

requirements with DISCOs without which the financial proposal will be “REJECTED”.

9. **Rejection of Bid**. A bid can be rejected under following circumstances: -
- a. Bidders not qualified and eligible as per Bid Qualification Criteria.
 - b. Bidders who have not done survey of the site.
 - c. Offers not accompanied with complete technical specifications of items being offered and not supported with detailed technical brochures.
 - d. Non responsive bid to any required criteria / specification.
 - e. Non submission of Tender Fee & Bid Security.
 - f. Late submission of tender from given date & time.
 - g. Offers not complying with the special instructions (para 3), Equipment conditions (para 4) and proposal conditions (para 7) in addition to other conditions.
10. **Particulars and Specifications**. Standard particulars and specifications are attached at **Annex “A”** for reference.
11. **Delivery of Tender**. The original copy of the tender is to be enclosed in double cover. (i) Technical Offer (ii) Commercial Offer, separately. The outer covers should be sealed and bear tender Enquiry Number, date of opening and address of this office without any indications.
12. **Date and Time for Submission of Tender**
- a. Tender must reach at Head Quarters National Logistics Corporation, Harding Road, Rawalpindi by the date and time specified in tender notice by hand or by post.
 - b. Tender must be dropped in the tender box before given time.
 - c. NLC will not be responsible for delay occurring in post.
13. **Price**
- a. The firms must quote prices on FOR Basis (**Karachi, Lahore & Rawalpindi**) and inclusive of all taxes, packing, delivery charges, installation, net metering and all other associated charges etc.

- b. The final decision of lowest firm will be done on quoted price of each location **(Karachi, Lahore & Rawalpindi)**.
- c. The price must be quoted in **PAK RUPEES** in figures and words at the appropriate space of the schedule to tender.
- d. Prices will be given with unit and aggregate price of each component separately. **REFERENCE OF ONE-LINE PRICE WILL NOT BE CONSIDERED.** Local taxes and GST shown separately for each item.
- e. Additional information, if any, must be linked with entries on the Schedule to Tender.
- f. Prices quoted should be firm and final.
- g. Tax exemption (if any) may be provided with the tender documents.

14. **Validity of Offers**. The validity period of quoted rates must be indicated and should be at **least 90 x days** from the date of opening the tender without any condition, extendable for further processing of the case, if required.

15. **Delivery Period**. Equipment must be delivered / installed within **120 x days** and completion of net metering within **180 x days** starting from the date of Letter of Intent or Award of Contract (whichever is earlier), beyond which Late Delivery Charges will apply.

16. **Packing**. Unless a method of packing is indicated in the specification in the schedule to tender form, the method of packing proposed by supplier must be described in schedule to the tender form. Contractors are at liberty to quote for additional alternative sizes and description of packs and these must be described in the schedule of tender. Packing should be such that item shall not damage in transit till place of delivery. **SAFE DELIVERY OF ITEMS IS SOLE RESPONSIBILITY OF FIRM.**

17. **Inspection at Consignee End**. Inspection by consignee will be carried out before and after delivery and post installation for any damages / breakages during transportation and correct functioning.

18. **Arbitration**. Any bidder feeling aggrieved by any act of procuring agency after submission of his bid and prior to award of the contract may lodge a written complaint to procurement agency under Rule - 48 PPRA. In case of any dispute, DG NLC will be Arbitrator.

19. **Risk and Expense**. Failure to supply the goods quoted or failure to meet the commitment made regarding delivery schedule, specifications, short supplies etc. will authorize HQ NLC to purchase the items at firm's risk and cost.

20. **Force Majeure**. The supplier will not be held responsible for any delay occurring the supply of contracted stores due to event of force majeure such as Act of God, War, Riots, Civil Commotion's Strikes, lock out or disturbance directly affecting the supply over which the supplier has no control. In such an event the contractor shall inform the Purchaser within 15 days of the happening in writing. Non-availability of raw material for the manufacture of stores or the export permit for the export of the contracted stores from the country of its origin shall not constitute Force Majeure.

21. **Late Delivery**. Late Delivery charges will be imposed @ 2 % of value of goods delayed per month and thereof until actual delivery or performance up to a maximum deduction of 10% of the Contract Cost.

22. **Terms of Payment**

- a. 20 % advance payment will be released against equal amount of Bank Guarantee from scheduled bank of Pakistan with "AAA" rating. (as per **Annex "B"**)
- b. 20 % on delivery of equipment on site.
- c. 40 % payment will be released after installation, commissioning, operationalization, final Inspection and issuance of CRV (Certified Receipt Voucher) by the consignee.
- d. Remaining 20% payment will be released after completion of Net Metering.

23. **Tender Fee and Bid Security**. Both will be prepared in the shape of bank draft (mentioning Firm Name & NTN on Back Side) in favor of **National Logistics Corporation HQ Main Account** and submitted as following: -

- a. **Tender Fee**. Rs 2,000 must be attached with technical offer.
- b. **Bid Security**. Rs 10,000,000/- in sealed envelope (**mentioning Name of Bank and Draft Number & Date**) must be attached with Technical offer.

24. **Bank Guarantee**

- a. Performance bank guarantee (as per **Annex "C"**) / certified cheque/ cashier's or manager's cheque or bank draft 5% of the contract value must be provided / deposited by the successful firm for award of contract, within 20 x days from issuance of Letter of Intent.

- b. The Guarantee should be from a schedule bank of “AA” rating and valid till one month after warranty period.
- c. Performance bank guarantee will be released after receipt of “No Demand Certificate” from user as per following: -
 - (1) 2 % after one year from date of LOI
 - (2) 3% after 5 years from date of LOI

25. **Warranty Period**

- a. Inverter - 5 x years or more
- b. Complete System - At least 5 x years or more (Less solar panel)
- c. PV Panels - As following: -
 - (1) 30 x years or more (Linear Power Performance Warranty)
 - (2) 12 x years or more (Enhanced Product Warranty on Materials and Workmanship)

26. **Comparison Chart.** Firms will also attach comparison chart and response to all queries / requirement in Annex “A” as part of their technical offer: -

NLC Specification	Firms Specification of Offered System with brand, model, manufacturer & country of origin (Fill all columns)	Complied with or Not

27. **Evaluation.** Technical offer of bidders found eligible and qualified as per Bid Qualification Criteria will be evaluated as per specifications **Annex “A”**. Financial offers of technically approved bidders will be opened and bidder with the lowest financial proposal will be considered as most advantageous bid.

28. Bids will be evaluated as per PPRA Rule 36 (d) (Two Stage – Two Envelope). Firm will submit both technical and commercial offer. However, both offers can be reviewed if any modification is allowed / recommended during technical evaluation.

Senior Manager Procurement
HQ NLC

HEADQUARTERS NATIONAL LOGISTICS CORPORATION

GENERAL CONDITIONS GOVERNING CONTRACT

- a. Tender will be opened at Head Office NLC, Harding Road Near AFIRM Rawalpindi at Date and Time mentioned in the newspaper add.
- b. Tender will be submitted in accordance with PPRA Rule 36 (d) i.e. **Two Stage Two Envelope Bidding Procedure.**
- c. Detail of Solar Systems (On-Grid) required to be procured is as under: -

Ser	Description	Quantity	Location
1.	Supply, Installation and net metering of Solar System 1 MW at NLC Log Park Karachi	1	Karachi Northern Bypass, NLC Logistics Park, Karachi
2.	Supply, Installation and net metering of Solar System 1 MW at NLC Log Park Lahore	1	Nathay Khalsa, NLC Logistics Park, Lahore
3.	Supply, Installation and net metering of Solar System 1 MW at NLC Log Park Rawalpindi	1	Rawat Chakbeli Road, Kalla Kotha Harraka, NLC Logistics Park, Rawalpindi

NL-3

Address _____
Telephone _____
Code Used _____

From: _____

To:

**THE DIRECTOR GENERAL
NATIONAL LOGISTICS CORPORATION
HARDING ROAD NEAR AFIRM RAWALPINDI**

Dear Sir,

1. I/We hereby offer to supply to the Director General NLC, stores as per detail in the Scheduled hereto or such portion thereof as you may specify in the contract at the prices given in the said schedule and agree to hold this offer open till _____. I/We shall be bound by a communication of acceptance dispatched within the prescribed time.
2. I/We hereby certify own eligibility as per Para 2 of NL-1.
3. I/We have understood the instructions to Tenders and Conditions of Contract as laid down in form NL-2 to "General Conditions Governing Contracts" and have thoroughly examined the specificity/drawing and or pattern quoted in the schedule hereto and am/are fully aware to the nature of the stores required and my/our offer is to supply stores strictly in accordance with the requirements.
4. Recommended technical manual/ data are also enclosed with the offer.
5. The following pages have been added to and form part of this tender.

Your faithfully

(Signature of Tendered)

Address _____

Dated _____

Signature of witness _____

Address _____

GSR – NLC LOGISTICS PARK KARACHI

Ser	Specification	NLC Requirement
1	Solution Types	<ul style="list-style-type: none"> • Solar System (On-Grid) 1 MW
2	Site Survey (Required)	<ul style="list-style-type: none"> • Technical proposal must cover following besides the other system specifications: • Exact solar load calculation at site followed by accurate details of electric appliances, duty cycles, time of operations (day/night), backup required, load management aspects. • Solarization will be planned with recovery of payback period 3-4 years. • Synchronization of solar load with local realities of having no grid or unreliable grid power. • Solar cost benefit analysis vs existing arrangements.
3	Photovoltaic Panels <ul style="list-style-type: none"> • Canadian • Jinko • Longi • JA • Or equivalent 	<ul style="list-style-type: none"> • Mono crystalline 600 Watt or above, Half cut; N type Bi-facial of Tier-1, Efficiency more than 24-25%. • Name of the manufacturer of PV Module • Month and year of the manufacture • Country of origin • I-V curve for the module • Peak Wattage, Im (max current flow in peak hrs), Vm (max voltage produced by panel in peak hrs) and FF (fill factor) for the module • Unique Serial No and Model No of the module • Name of the test lab issuing IEC certificate other relevant information on traceability of solar cells and module as per ISO 9000 series including construction details of the panels. • The PV modules must conform to the latest edition of IEC 61215 Standard for PV module design qualification and type approval; and IEC 61230 standard for earthing and short circuiting; and IEC 61730 standard for safety qualification. A certificate and a report stating compliance to the relevant standards which is also verifiable from the certifying laboratory shall be submitted.
4	Inverter <ul style="list-style-type: none"> • Goodwe • Sungrow • Solis • Huawei • Or equivalent 	<ul style="list-style-type: none"> • Inverter Topology on-grid, must have net metering compatibility with grid. • Reverse Feed to Grid • Should have input lightning protection, Anti - ice landing protection, PV string input reverse polarity protection, insulation resistor detection, Residual current monitoring unit, output over current protection, output shorted protection, ground fault protection, surge protection, pure sine wave characteristics. • Monitoring software for real-time status display and fault control. • The unit should be able to operate in a high ambient temperature environment. • Efficiency: must be more than 98%.

		<ul style="list-style-type: none"> The inverter must conform to the latest edition of IEC 61727, IEC 61000-6-1, IEC 610006-2, IEC 62109 and IEC 62116 standard, and grid regulation standards: EN50549, AS4777.2, VDE0126, VDEN4105, G99, NBT32004, CEI0-21, NRS097, NBR16149/16150, RD1699 Protection type: IP65/ IP66/ IP67/ IP68
5	Software Interface	<ul style="list-style-type: none"> User friendly, Touch Screen showing all features i.e., solar status, Grid Status with history records up to 01x Month, fault Notification, data Storage (cell temp & voltage levels etc), forecasted data (Solar availability, Load Shedding hours etc).
6	Power Cables <ul style="list-style-type: none"> Newage Pakistan cables Or equivalent 	<ul style="list-style-type: none"> Must confirm to latest edition / standards. Temperature Range should be -10°C to +80°C. AC cables: 120mm 4 core. DC cables: 6mm Copper Gat XLPO. DC Distribution Box: 3/7ft AC Distribution Box: 7/4ft High quality DC fuse protection The cables should be insulated with a special grade PVC compound. The Cable should bear minimum losses of maximum 2%. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All cables required for the plant provided by the bidder. Any change in cable sizing if desired by the bidder/approved after citing appropriate reasons. All cable schedules/ layout drawings approved prior to installation. Following test reports must be submitted: <ul style="list-style-type: none"> Copper purity test (at least 99.9% pure) Insulation Thickness Test DC Resistance Test High Voltage Test
7	Mounting Structure	<ul style="list-style-type: none"> Aluminum Railing Structure with Standing Seam Clamp. Stainless Steel Nut Bolts, J-Bolts, Rawal Bolts etc (industrial grade) should be used. Each structure should have angle of inclination as per the site conditions to take maximum irradiation. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Note: 3D Design and Feasibility report will be shared with HQ NLC by vendor before deployment of project.
8	Mobile App	<ul style="list-style-type: none"> All features displayed on inverter panel can be monitor on Mobile app & on central display on screen. Connected through Internet and remote-control room for rectification purposes compatible with all smart phones.
9	Monitoring Mechanism	<ul style="list-style-type: none"> The company should provide a comprehensive fault detection, accident prevention, efficiency monitoring 24/7 without any holiday and fault removal mechanism.
10	Company Employees	<ul style="list-style-type: none"> 15 + Engineers / Technicians preferably to provide backup support
11	NEPRA Registration	<ul style="list-style-type: none"> Firm must be registered with AEDB/ PEC/ SECP. The firm shall bear full responsibility for all NEPRA and DISCO-related approvals, NOC^s, fees, documentation, and procurement/ installation of the bi-directional meter. The net-metering connection

		shall be obtained and commissioned by the firm at its own cost within the shortest possible time after solar system installation.	
12	Completion Time	<ul style="list-style-type: none"> As per system capacity and requirements 	
13	Training	<ul style="list-style-type: none"> 01 Day Training (on site) 	
14	System accessories	<ul style="list-style-type: none"> All type Circuit Breakers: LG, Schneider, LS or equivalent. Change over bypass switches: (LG, Schneider, equivalent), As per system requirements AC Breakers: 200A Main AC Breaker: 1500-2000A (industrial grade) Earthing wire: 4mm for panel, 10mm pure CU for AC, Cu rope, earthing Rod and powder. Cable Ties: As per system requirements. MC4 PV connectors (QC solar or equivalent), Lugs, Nuts/Bolts (stainless steel grade 304, 18/8 or as per system req), Thimbles (chrome plated), PVC Cable Duct & conduits (Adam Jee or equivalent). All wires/ cables must be terminated through cable lugs. Lightning Arrester with its accessories made by pure copper (rod, base, spikes, ball). Early streamer Emission (ESE) Lightning Arrestors with 95mm Cu rod. 	
15	Site services	<ul style="list-style-type: none"> The contractor shall be responsible for obtaining, processing, and completing all net-metering approvals, documentation, and related formalities with the relevant authorities. 	
16	Commissioning	<ul style="list-style-type: none"> The contractor must show results for following Tests, on site: Proper Earthing solar project & Earthing Test On-Grid system test Lightening Arrester: Pure copper ball with spikes on rod type. Note: Testing Equipment including Earthing Tester etc. will be supplier's responsibility. 	
17	PV DG Controller (Synchronizer)	<ul style="list-style-type: none"> PV DG controller (PLC+7HMI) for genset & Inverters synchronization (SCADA based control and monitoring), limited/zero export feature and gensets Protections (Reverse power and fuel saving). Accessories (Energy analyzers, CTs, terminal blocks, end stopper, ethernet switch, patch cables, control panel) 	
18	Warranty	<ul style="list-style-type: none"> PV Panels 	12 / 30 Years
		<ul style="list-style-type: none"> Inverter 	5 Years or more
		<ul style="list-style-type: none"> Complete System: 	5 Years or more complete system (less Inverter & PV panels)

GSR - NLC LOGISTICS PARK LAHORE

Ser	Specification	NLC Requirement
1	Solution Types	<ul style="list-style-type: none"> • Solar System (On-Grid) 1 MW
2	Site Survey (Required)	<ul style="list-style-type: none"> • Technical proposal must cover following besides the other system specifications: • Exact solar load calculation at site followed by accurate details of electric appliances, duty cycles, time of operations (day/night), backup required, load management aspects. • Solarization will be planned with recovery of payback period 3-4 years. • Synchronization of solar load with local realities of having no grid or unreliable grid power. • Solar cost benefit analysis vs existing arrangements.
3	Photovoltaic Panels <ul style="list-style-type: none"> • Canadian • Jinko • Longi • JA • Or equivalent 	<ul style="list-style-type: none"> • Mono crystalline 600 Watt or above, Half cut; N type Bi-facial of Tier-1, Efficiency more than 24-25 %. • Name of the manufacturer of PV Module • Month and year of the manufacture • Country of origin • I-V curve for the module • Peak Wattage, Im (max current flow in peak hrs), Vm (max voltage produced by panel in peak hrs) and FF (fill factor) for the module • Unique Serial No and Model No of the module • Name of the test lab issuing IEC certificate other relevant information on traceability of solar cells and module as per ISO 9000 series including construction details of the panels. • The PV modules must conform to the latest edition of IEC 61215 Standard for PV module design qualification and type approval; and IEC 61230 standard for earthing and short circuiting; and IEC 61730 standard for safety qualification. A certificate and a report stating compliance to the relevant standards which is also verifiable from the certifying laboratory shall be submitted.
4	Inverter <ul style="list-style-type: none"> • Goodwe • Sungrow • Solis • Huawei • Or equivalent 	<ul style="list-style-type: none"> • Inverter Topology on-grid, must have net metering compatibility with grid. • Reverse Feed to Grid • Should have input lightning protection, Anti - ice landing protection, PV string input reverse polarity protection, insulation resistor detection, Residual current monitoring unit, output over current protection, output shorted protection, ground fault protection, surge protection, pure sine wave characteristics. • Monitoring software for real-time status display and fault control. • The unit should be able to operate in a high ambient temperature environment. • Efficiency: must be more than 98%. • The inverter must conform to the latest edition of IEC 61727, IEC 61000-6-1, IEC 610006-2, IEC 62109 and IEC 62116 standard, and grid regulation standards: EN50549, AS4777.2, VDE0126, VDEN4105, G99, NBT32004, CEIO-21, NRS097, NBR16149/16150, RD1699 • Protection type: IP65/ IP66/ IP67/ IP68
5	Software Interface	<ul style="list-style-type: none"> • User friendly, Touch Screen showing all features i.e., solar status, Grid Status with history records up to 01x Month, fault Notification, data

		Storage (cell temp & voltage levels etc), forecasted data (Solar availability, Load Shedding hours etc).
6	Power Cables <ul style="list-style-type: none"> Newage Pakistan cables Or equivalent 	<ul style="list-style-type: none"> Must confirm to latest edition / standards. Temperature Range should be -10°C to +80°C. AC cables: 120mm 4 core. DC cables: 6mm Copper Gat XLPO. DC Distribution Box: 3/7ft AC Distribution Box: 7/4ft High quality DC fuse protection The cables should be insulated with a special grade PVC compound. The Cable should bear minimum losses of maximum 2%. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All cables required for the plant provided by the bidder. Any change in cable sizing if desired by the bidder/approved after citing appropriate reasons. All cable schedules/ layout drawings approved prior to installation.
		<ul style="list-style-type: none"> Following test reports must be submitted: <ul style="list-style-type: none"> Copper purity test (at least 99.9% pure) Insulation Thickness Test DC Resistance Test High Voltage Test
7	Mounting Structure	<ul style="list-style-type: none"> Aluminum Railing Structure with Standing Seam Clamp. Stainless Steel Nut Bolts, J-Bolts, Rawal Bolts etc (industrial grade) should be used. Each structure should have angle of inclination as per the site conditions to take maximum irradiation. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Note: 3D Design and Feasibility report will be shared with HQ NLC by vendor before deployment of project.
8	Mobile App	<ul style="list-style-type: none"> All features displayed on inverter panel can be monitor on Mobile app & on central display on screen. Connected through Internet and remote-control room for rectification purposes compatible with all smart phones.
9	Monitoring Mechanism	<ul style="list-style-type: none"> The company should provide a comprehensive fault detection, accident prevention, efficiency monitoring 24/7 without any holiday and fault removal mechanism.
10	Company Employees	<ul style="list-style-type: none"> 15 + Engineers / Technicians preferably to provide backup support
11	NEPRA Registration	<ul style="list-style-type: none"> Firm must be registered with AEDB/ PEC/ SECP. The firm shall bear full responsibility for all NEPRA and DISCO-related approvals, NOC's, fees, documentation, and procurement/ installation of the bi-directional meter. The net-metering connection shall be obtained and commissioned by the firm at its own cost within the shortest possible time after solar system installation.
12	Completion Time	<ul style="list-style-type: none"> As per system capacity and requirements
13	Training	<ul style="list-style-type: none"> 01 Day Training (on site)
14	System accessories	<ul style="list-style-type: none"> All type Circuit Breakers: LG, Schneider, LS or equivalent. Change over bypass switches: (LG, Schneider, equivalent), As per system requirements AC Breakers: 200A

		<ul style="list-style-type: none"> • Main AC Breaker: 1500-2000A (industrial grade) • Earthing wire: 4mm for panel, 10mm pure CU for AC, Cu rope, earthing Rod and powder. • Cable Ties: As per system requirements. • MC4 PV connectors (QC solar or equivalent), Lugs, Nuts/Bolts (stainless steel grade 304, 18/8 or as per system req), Thimbles (chrome plated), PVC Cable Duct & conduits (Adam Jee or equivalent). • All wires/ cables must be terminated through cable lugs. Lightning Arrester with its accessories made by pure copper (rod, base, spikes, ball). • Early streamer Emission (ESE) Lightning Arrestors with 95mm Cu rod. 	
15	Site services	<ul style="list-style-type: none"> • The contractor shall be responsible for obtaining, processing, and completing all net-metering approvals, documentation, and related formalities with the relevant authorities. 	
16	Commissioning	<ul style="list-style-type: none"> • The contractor must show results for following Tests, on site: • Proper Earthing solar project & Earthing Test • On-Grid system test • Lightening Arrester: Pure copper ball with spikes on rod type. • Note: Testing Equipment including Earthing Tester etc. will be supplier's responsibility. 	
17	PV DG Controller (Synchronizer)	<ul style="list-style-type: none"> • PV DG controller (PLC+7HMI) for Genset & Inverters synchronization (SCADA based control and monitoring), limited/zero export feature and gensets Protections (Reverse power and fuel saving). Accessories (Energy analyzers, CTs, terminal blocks, end stopper, ethernet switch, patch cables, control panel) 	
18	Warranty	<ul style="list-style-type: none"> • PV Panels 	12/ 30 Years
		<ul style="list-style-type: none"> • Inverter 	5 Years or more
		<ul style="list-style-type: none"> • Complete System: 	5 Years or more complete system (less Inverter & PV panels)

GSR - NLC LOGISTICS PARK RAWALPINDI

Ser	Specification	NLC Requirement
1	Solution Types	<ul style="list-style-type: none"> • Solar System (On-Grid) 1 MW
2	Site Survey (Required)	<ul style="list-style-type: none"> • Technical proposal must cover following besides the other system specifications: • Exact solar load calculation at site followed by accurate details of electric appliances, duty cycles, time of operations (day/night), backup required, load management aspects. • Solarization will be planned with recovery of payback period 3-4 years. • Synchronization of solar load with local realities of having no grid or unreliable grid power. • Solar cost benefit analysis vs existing arrangements.
3	Photovoltaic Panels <ul style="list-style-type: none"> • Canadian • Jinko • Longi • JA • Or equivalent 	<ul style="list-style-type: none"> • Mono crystalline 600 Watt or above, Half cut; N type Bi-facial of Tier-1, Efficiency more than 24-25%. • Name of the manufacturer of PV Module • Month and year of the manufacture • Country of origin • I-V curve for the module • Peak Wattage, Im (max current flow in peak hrs), Vm (max voltage produced by panel in peak hrs) and FF (fill factor) for the module • Unique Serial No and Model No of the module • Name of the test lab issuing IEC certificate other relevant information on traceability of solar cells and module as per ISO 9000 series including construction details of the panels. • The PV modules must conform to the latest edition of IEC 61215 Standard for PV module design qualification and type approval; and IEC 61230 standard for earthing and short circuiting; and IEC 61730 standard for safety qualification. A certificate and a report stating compliance to the relevant standards which is also verifiable from the certifying laboratory shall be submitted.
4	Inverter <ul style="list-style-type: none"> • Goodwe • Sungrow • Solis • Huawei • Or equivalent 	<ul style="list-style-type: none"> • Inverter Topology on-grid, must have net metering compatibility with grid. • Reverse Feed to Grid • Should have input lightning protection, Anti - ice landing protection, PV string input reverse polarity protection, insulation resistor detection, Residual current monitoring unit, output over current protection, output shorted protection, ground fault protection, surge protection, pure sine wave characteristics. • Monitoring software for real-time status display and fault control. • The unit should be able to operate in a high ambient temperature environment. • Efficiency: must be more than 98%. • The inverter must conform to the latest edition of IEC 61727, IEC 61000-6-1, IEC 610006-2, IEC 62109 and IEC 62116 standard, and grid regulation standards: EN50549, AS4777.2, VDE0126, VDEN4105, G99, NBT32004, CEI0-21, NRS097, NBR16149/16150, RD1699 • Protection type: IP65/ IP66/ IP67/ IP68

5	Software Interface	<ul style="list-style-type: none"> User friendly, Touch Screen showing all features i.e., solar status, Grid Status with history records up to 01x Month, fault Notification, data Storage (cell temp & voltage levels etc), forecasted data (Solar availability, Load Shedding hours etc).
6	Power Cables <ul style="list-style-type: none"> Newage Pakistan cables Or equivalent 	<ul style="list-style-type: none"> Must confirm to latest edition / standards. Temperature Range should be -10°C to +80°C. AC cables: 120mm 4 core. DC cables: 6mm Copper Gat XLPO. DC Distribution Box: 3/4ft AC Distribution Box: 5/4ft High quality DC fuse protection The cables should be insulated with a special grade PVC compound. The Cable should bear minimum losses of maximum 2%. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All cables required for the plant provided by the bidder. Any change in cable sizing if desired by the bidder/approved after citing appropriate reasons. All cable schedules/ layout drawings approved prior to installation.
		<ul style="list-style-type: none"> Following test reports must be submitted: <ul style="list-style-type: none"> Copper purity test (at least 99.9% pure) Insulation Thickness Test DC Resistance Test High Voltage Test
7	Mounting Structure	<ul style="list-style-type: none"> Aluminum Railing Structure with Standing Seam Clamp. Stainless Steel Nut Bolts, J-Bolts, Rawal Bolts etc (industrial grade) should be used. Each structure should have angle of inclination as per the site conditions to take maximum irradiation. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Note: 3D Design and Feasibility report will be shared with HQ NLC by vendor before deployment of project.
8	Mobile App	<ul style="list-style-type: none"> All features displayed on inverter panel can be monitor on Mobile app & on central display on screen. Connected through Internet and remote-control room for rectification purposes compatible with all smart phones.
9	Monitoring Mechanism	<ul style="list-style-type: none"> The company should provide a comprehensive fault detection, accident prevention, efficiency monitoring 24/7 without any holiday and fault removal mechanism.
10	Company Employees	<ul style="list-style-type: none"> 15 + Engineers / Technicians preferably to provide backup support
11	NEPRA Registration	<ul style="list-style-type: none"> Firm must be registered with AEDB/ PEC/ SECP. The firm shall bear full responsibility for all NEPRA and DISCO-related approvals, NOC's, fees, documentation, and procurement/ installation of the bi-directional meter. The net-metering connection shall be obtained and commissioned by the firm at its own cost within the shortest possible time after solar system installation.
12	Completion Time	<ul style="list-style-type: none"> As per system capacity and requirements
13	Training	<ul style="list-style-type: none"> 01 Day Training (on site)
14	System accessories	<ul style="list-style-type: none"> All type Circuit Breakers: LG, Schneider, LS or equivalent. Change over bypass switches: (LG, Schneider, equivalent), As per

		<p>system requirements</p> <ul style="list-style-type: none"> • AC Breakers: 200A • Main AC Breaker: 1500-2000A (industrial grade) • Earthing wire: 4mm for panel, 10mm pure CU for AC, Cu rope, earthing Rod and powder. • Cable Ties: As per system requirements. • MC4 PV connectors (QC solar or equivalent), Lugs, Nuts/Bolts (stainless steel grade 304, 18/8 or as per system req), Thimbles (chrome plated), PVC Cable Duct & conduits (Adam Jee or equivalent). • All wires/ cables must be terminated through cable lugs. Lightning Arrester with its accessories made by pure copper (rod, base, spikes, ball). • Early streamer Emission (ESE) Lightning Arrestors with 95mm Cu rod. 	
15	Site services	<ul style="list-style-type: none"> • The contractor shall be responsible for obtaining, processing, and completing all net-metering approvals, documentation, and related formalities with the relevant authorities. 	
16	Commissioning	<ul style="list-style-type: none"> • The contractor must show results for following Tests, on site: • Proper Earthing solar project & Earthing Test • On-Grid system test • Lightening Arrestor: Pure copper ball with spikes on rod type. • Note: Testing Equipment including Earthing Tester etc. will be supplier's responsibility. 	
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18	Warranty	<ul style="list-style-type: none"> • PV Panels 	12/ 30 Years
		<ul style="list-style-type: none"> • Inverter 	5 Years or more
		<ul style="list-style-type: none"> • Complete System: 	5 Years or more complete system (less Inverter & PV Modules)

Bank Guarantee for Mobilization Advance

Guarantee No. : [Insert]
Date of Issuance : [Insert]
Date of Expiration : [Insert]
Amount of B/G : [Insert amount]

Name of the Principal (Contractor) : [Insert]
Address of the Principal (Contractor) : [Insert]
Name of the Guarantor/Warranter
(Bank) : [Insert name]
Address of the Guarantor/Warranter
(Bank) : [Insert branch address]
Letter of Acceptance : [Insert letter No. and date]
To (Employer) : National Logistics Corporation (NLC)
Harding Road, GHQ,
Rawalpindi.

WHEREAS, on [Insert Date], M/s [Insert Entity name] (hereinafter referred to as the "**Contractor**"), a [legal status of the entity] registered under [insert relevant law], having its registered office at [Insert address], entered into an agreement bearing reference no. [Insert] (hereinafter referred to as "**Contract No. [Insert]**"), with the National Logistics Corporation (hereinafter referred to as the "**Employer**"), for [Insert purpose and object of Contract No. [Insert]]

AND WHEREAS, under the terms and conditions of Contract No. [Insert], an amount of [Insert], representing [Insert] percent advance payment out of a total contract value of [Insert] (hereinafter referred to as the "**Contract Price**"), is to be paid by the Employer to the Contractor.

AND WHEREAS, the Employer, in pursuance of the terms and conditions of Contract No. [Insert], has agreed to make an advance payment of [Insert amount] to the Contractor, as mobilization advance under [Insert clause] of Contract No. [Insert] (hereinafter referred to as the "**Mobilization Advance**"), on the Contractor furnishing a Bank Guarantee in the manner herein contained.

NOW THEREFORE, [Insert Bank Name] (hereinafter referred to as the "**Guarantor**") hereby undertakes to pay unconditionally/irrevocably the amount due and payable under this guarantee (hereinafter referred to as the "**Guarantee**") without any demur and without any reference to principal/Contractor, by way of first written demand notice (hereinafter referred to as the "**Demand Notice**") from the Employer stipulating any actual, threatened or anticipated breach by the Contractor of any of the terms and conditions of Contract No. [Insert].

PROVIDED THAT, the Guarantor undertakes to pay the Employer any money so demanded notwithstanding any dispute or disputes raised by the Contractor in any suit or proceeding pending before any court or tribunal relating thereto.

PROVIDED FURTHER THAT, the Guarantor agrees that the decision of the Employer as to whether the Contractor has committed a breach of any such terms and conditions of Contract No. [Insert] or not, and as to amount of damages or loss assessed by the Employer as damage or loss suffered by the Employer on account of such breach shall be final and binding on the Guarantor.

PROVIDED FURTHER THAT, the Employer is vested with the liberty, without the Guarantor’s consent and without affecting in any manner, the Guarantor’s obligations hereunder, to vary any of the terms and conditions of Contract No. [Insert], and any such variation shall not relieve the Guarantor from its obligations under this Guarantee.

PROVIDED FURTHER THAT, this Guarantee shall remain in force until the Mobilization Advance stands fully adjusted with payments made to the Contractor under the interim payment certificates of Contract No. [Insert] or until [Insert Date of Expiration], whichever event occurs earlier.

PROVIDED FURTHER THAT, the stipulated period of validity of this Guarantee shall be deemed to be extended if the advance payment is not adjusted on the date specified above.

PROVIDED FURTHER THAT, the Guarantor’s liability under this Guarantee shall not in any case exceed the sum of [insert amount] [insert amount in words].

IN WITNESS THEREOF, the Guarantor executes this instrument under its seal which shall be unconditional and irrevocable, per his bounden duty on the date specified above, the name and corporate seal of the Guarantor hereto affixed, and these presents duly signed by its undersigned representative, pursuant to the authority of its governing body.

For and on behalf of [Insert bank name] and [Insert branch address]

Dated [Insert date], [Insert year], at [Insert location]

Authorized Signatory

Witness # 1:

Name: _____
CNIC No. _____
Address: _____
Signature: _____



Witness # 2:

Name: _____
CNIC No. _____
Address: _____
Signature: _____

**BANK GUARANTEE FOR PERFORMANCE ON JUDICIAL STAMP PAPER OF Rs.100/-
OR AS SUITABLE TO THE AMOUNT OF BANK GUARANTEE
FORM OF PERFORMANCE SECURITY (BANK GUARANTEE)**

Guarantee No. : [Insert]
Date of Issuance : [Insert]
Date of Expiration : [Insert]
Amount of L/G : [Insert amount]
[Insert amount in words]
Name of the Principal (Contractor) : [Insert]
Address of the Principal (Contractor) : [Insert]
Name of the Guarantor/Warranter
(Bank) : [Insert name]
Address of the Guarantor/Warranter
(Bank) : [Insert branch address]
Letter of Acceptance : [Insert letter No. and date]
To (Employer) : National Logistic Corporation (NLC), HQ NLC
Harding Road, R.A Bazar, Saddar,
Rawalpindi.

WHEREAS, pursuant to the submission of a successful bid by M/s [Insert Entity name] (hereinafter referred to as the "**Contractor**"), a [legal status of the entity] registered under [insert relevant law], having its registered office at [Insert address], the National Logistics Corporation (hereinafter referred to as the "**Employer**"), on [Insert date], issued a letter of acceptance (hereinafter referred to as the "**LOA**");

AND WHEREAS, in compliance with the terms and conditions of the LOA, and upon the request of the Contractor, [Insert Bank Name] (hereinafter referred to as the "**Guarantor**") hereby undertakes to pay the amount due and payable under this guarantee (hereinafter referred to as the "**Guarantee**") without any demur, by way of a written demand notice (hereinafter referred to as the "**Demand Notice**") in order to secure the performance of the Contractor's obligations under the LOA, including, *inter alia*, [Insert a brief description of the obligations] (hereinafter referred to as the "**Guaranteed Obligations**");

AND WHEREAS, the condition precedent of this Guarantee is such that the Contractor has accepted the Employer's LOA;

NOW THEREFORE, in pursuance of the terms and conditions of the LOA, and at the request of the Contractor, we hereby affirm that we the Guarantor, as named above, are responsible to you, on behalf of the Contractor, for a total amount of [Insert amount of Guarantee] [Amount in words] (hereinafter referred to as the "**Guaranteed Sum**"), and held firmly bound unto the Employer for the foregoing amount. We undertake to pay the Employer, upon its first written application and without cavil or argument within three (03) days of the receipt of the written demand (the "**Due Date**"), any sum(s) within the ambit of [Amount of Guarantee], without requiring the Employer to prove any specific grounds or reasons for the demand put forth for the sum specified therein;

PROVIDED THAT, the Guarantor hereby binds itself unconditionally and irrevocably, and undertakes and guarantees to pay the Guaranteed Sum, as primary obligor and not merely as surety, without protest or demur and without reference, notice or recourse to the Contractor or any other

person, and hereby expressly waives all rights to deny its obligation to the Employer irrespective of any dispute, difference or disagreement between the Contractor and Employer or contest by any other party or person;

PROVIDED FURTHER THAT, at any time during the validity of this Guarantee, the Employer may, at its sole discretion and decision, demand payment of the entire Guaranteed Sum, or any portion thereof, from the Guarantor. The decision of the Employer as to the Contractor's default, delay, or failure in performing the Guaranteed Obligations shall be final and binding on the Guarantor, which shall not be questioned by the Guarantor in any manner whatsoever;

PROVIDED FURTHER THAT, this Guarantee shall remain in full force and be effective for a period up to [*Insert duration*], and any extension(s) thereof, and the Guarantor's obligations under this Guarantee shall be for payment of the Guaranteed Sum or part thereof as may be demanded by the Employer from time to time;

PROVIDED FURTHER THAT, the Employer may, if and when and in such manner as the Employer in its sole discretion deems appropriate, grant time or other indulgence to or accept or make any composition or arrangement with the Contractor and/or vary, renew, discharge, realize, release, enforce or deal with any other securities, guarantees, obligations, decrees, contracts, or agreements, now or hereinafter made or held by the Employer, and such acts shall not affect in any way whatsoever the Employer's rights under this Guarantee, and shall not affect in any way whatsoever the Guarantor's liability hereunder, or discharge the Guarantor from its obligations under this Guarantee;

PROVIDED FURTHER THAT, demands under this Guarantee may be made from time to time in accordance with its terms. Partial payments of the Guaranteed Sum shall not discharge this Guarantee and this Guarantee shall remain in full force and effect in accordance with its terms for the difference from time to time between the aggregate total of the partial payments made and the Guaranteed Sum;

PROVIDED FURTHER THAT, no delay or failure to exercise any right or remedy under this Guarantee by the Employer shall constitute a waiver of such right or remedy. No single or partial exercise of any right or remedy shall preclude any other or further exercise thereof or of any other right or remedy. No waiver by the Employer shall be valid unless made in writing;

PROVIDED FURTHER THAT, no set-off, counter claim, reduction, or diminution of any obligation that the Guarantor has or may have against the Employer shall be available to it against the Employer in connection with any of its obligations to the Employer under this Guarantee. The Guarantor shall make all payments under this Guarantee in [*Insert currency*] and in full, without set-off or counterclaim and free and clear of any deductions or withholdings in immediately available, freely transferable, cleared funds for value on the Due Date to the Employer, provided that if the Guarantor is required to make any deduction or withholding from such payments under applicable law, it shall pay to the Employer such additional amount necessary to ensure that the Employer receives an amount equal to the amount which it would have received had no such deduction or withholding been made. In the event under the laws of the Islamic Republic of Pakistan the payment of the Guaranteed Sum in a currency other than Pakistan Rupees is prohibited or becomes unlawful, or the due execution, validity, enforceability or performance of the obligations of the Guarantor hereunder is questioned by any Court, the State Bank of Pakistan or other competent authority or agency with jurisdiction over the Guarantor on the grounds of the Guaranteed Sum being denominated in a foreign currency, this Guarantee shall secure and shall be deemed always to have secured the Guaranteed Sum in equivalent Pakistan Rupees calculated at the average of the National Bank of Pakistan Telegraphic Transfer & On – Demand selling rate for United States Dollars prevalent on the date of issuance of this Guarantee and payment of the whole or part of the Guaranteed Sum as demanded by the Employer may in such event be made by the Guarantor in Pakistan Rupees;

PROVIDED FURTHER THAT, the Guarantor hereby declares and confirms that under its constitution and applicable laws and regulations, it has the necessary power and authority, and has obtained all necessary authorizations, approvals and consents thereunder to enter into, execute, deliver and perform the obligations it has undertaken under this Guarantee, which obligations are valid and legally binding on and enforceable against the Guarantor under the laws of the Islamic Republic of Pakistan. In addition thereto, the signatory to this Guarantee are the Guarantor's duly authorized officers;

PROVIDED FURTHER THAT, this Guarantee shall expire at the official closing of the counters of the Guarantor, [*Name of the Branch*] [*City*], on [*Expiry date*] (hereinafter referred to as the "**Expiry Date**"). Except for demands made by the Employer under this Guarantee on or before the Expiry Date, the Guarantor shall stand fully discharged and released from any and all obligations, claims and liabilities under this Guarantee whether or not this instrument of Guarantee is returned to the Guarantor;

IN WITNESS THEREOF, the Guarantor executes this instrument which shall be unconditional and irrevocable, under its seal per his bounden duty on the date specified above, the name and corporate seal of the Guarantor hereto affixed and these presents duly signed by its undersigned representative, pursuant to the authority of its governing body.

For and on behalf of [*insert bank name*] and [*insert branch address*]

Dated [*Insert date*], [*Insert year*], at [*Insert location*]

Witnesses:

Witness # 1:

Name: _____
CNIC No. _____
Address: _____
Signature: _____

Witness # 2:

Name: _____
CNIC No. _____
Address: _____
Signature: _____