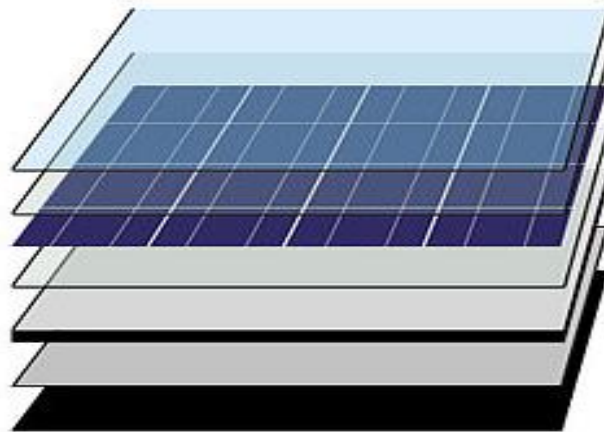




REOI for Solar Panels and Battery Storage

(Herat2 Branch)



Prepared by:

The First Microfinance Bank – Afghanistan (FMFB-A)

The First Microfinance Bank, Afghanistan now invites eligible solar firms to indicate their interest in providing the Services. Interested firms should provide information demonstrating that they have the required qualifications and relevant experience to perform the project.

The Objective of the project are as below:

Contractor shall provide a total turnkey project including all necessary equipment, materials, design, manufacturing and installation services for the installation of a Roof Mounted utility-interactive photovoltaic system that shall produce a minimum of 20 kWh AC per year (20 kWh daytime, 5 kWh nighttime) at the point of interconnection, approximately 25 kW DC capacity. Larger capacity systems that produce more than the minimum are an alternative and will be evaluated but the proposed system shall not produce more than 20 kWh per year. The contractor should prepare system summary detailing each location, applicable equipment/size, predicted system energy production (kWh). In relations to any building mounted system, the contractor shall evaluate roof conditions and may remove the existing roof system and replace it with either an integrated roof/PV system or a new roof with PV system installed. This project shall meet all requirements of this Statement of Work and other specifications included that apply.

The contractor shall perform all professional services as necessary to provide FMFB-A with a complete design package including the requirements outlined in this Statement of Work. The contractor shall install the project such that it is operational and compliant with all applicable standards, building codes, UTILITY interconnection requirements. The contractor shall include specifications, calculations and drawings in the design package, and turn it over to FMFB-A. After approval by FMFB-A of the final design package, the contractor shall provide all necessary construction to successfully complete the photovoltaic system installation.

Design Guidelines for Roof Mounted.

Design Guidelines for Rooftop PV. Contractor shall develop a design for a new photovoltaic system at Herat city. See attached drawings indicating available areas for installation and existing roof structure plans. These drawings are meant for informational purposes only and must be field verified by the contractor.

- Mounting system shall limit roof penetrations and shall be either building integrated roof PV or fully ballasted. Mounting system design needs to meet applicable local building code requirements with respect to snow, wind, and earthquake factors.
- Conduit penetrations shall be minimized.
- If system is not building integrated or membrane sealed, system shall be fixed tilt (minimum 5 degrees tilt for flat roof or flush mounted for sloped roof) with an orientation that maximizes annual energy production.
- All roof access points shall be securely locked at the end of each day.
- System layout shall meet Herat city fire department.

Performance Criteria. The following performance criteria shall be met for all arrays:

- Power provided shall be 220V one phase compatible with the onsite distribution system.
- Proposal shall provide estimated energy delivery for each array, for each month of the year and total for the year at the delivered voltage (220V). The estimated annual energy delivery for all arrays shall be a minimum of 20 kWh AC/year at point of interconnection (POI).
- All PV hardware components shall be either stainless steel or aluminum. PV structural components shall be corrosion resistant (galvanized steel, stainless steel, composites, or aluminum).
- The project, including supports and power conductors, shall not interfere with roof drains, water drainage, expansion joints, air intakes, existing electrical and mechanical

equipment, existing antennas, and planned areas for future installation of equipment shown on drawings.

PROPOSAL CONCEPT DRAWINGS AND SPECIFICATIONS SUBMISSIONS

- 1.1 **Concept Drawings.** The contractor shall provide FMFB-A with concept drawings with the proposal. The drawings must indicate the proposed location of the PV array(s) and access points along with a one-line electrical diagram showing inverters, transformers, meters, and interconnection locations. All drawings shall be submitted with dimensions shown in English units.
- 1.2 **Concept Information.** The proposal shall include major equipment information, proposed installation/interconnection information, applicable incentive information, and performance characteristics of the system. Identify an appropriate location for the solar PV inverter equipment and its related components and environmental control systems that will meet the following criteria:
 - Ease of maintenance and monitoring
 - Efficient operation
 - Low operating losses
 - Secured location and hardware
 - Compatibility with existing facilities
 - Avoidance of flood-prone areas

Construction Drawings

- 1.2.1 Provide drawings for each discipline required (architectural, structural, electrical, etc.), with separate plans for new work and demolition as well as special types of drawings where necessary, such as enlarged plans, equipment curbing and flashing details, roof penetration details etc. Drawings shall clearly distinguish between new and existing work.

1.2.2 Each drawing shall indicate project title, project number, array identification and location, address and/or phone number, contract number, drawing title, drawing type, drawing number, and key plan. A cover sheet shall be provided and shall include a list of the drawings, legend, vicinity map, and location map in addition to all items required for each drawing. Each drawing sheet submitted shall include a graphic scale in the lower right-hand portion of the sheet. At a minimum, the following drawings are required:

- Site plan including utility locations and connections – shall show staging and phasing requirements.
- Electrical plans – including single line diagram and utility interconnection.
- Electrical details.
- Roof plan – showing the full layout of the system and detailing any obstacles that must be permanently or temporarily removed or relocated.
- Array support and mounting details.
- Any drawings that may be required to install a complete project.
- Water proofing details

1.2.3 The contract documents shall sufficiently define the Statement of Work and shall stand on their own.

1.2.4 Specifically address the means to keep the existing building accessible and operational by means of relocation.

Selection criteria

The First Microfinance Bank, Afghanistan invites quotations from reputed firms/contractors to procure materials and services for the solar system of the Herat2 branch located in Darb-e-Khush, Kahkashan Market.

- The firm must have experience in development of at least three solar projects

- Excellent technical capacities to ensure smooth and high-quality deliverables
- Local companies/firms must be registered with Afghanistan government
- Quotations must be valid for a period of thirty days (30) days from the closing date of the RFP
- The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account
- Based on FMFB procurement procedure an exact five percent performance guarantee will be collected from the winning company prior signing the contract and will be released 4 months after completion of the project
- Proposed work breakdown structure techniques for the project completion
- The bank has the right to accept/reject any quotation as per its procurements policy
- The guaranty period for the 20KW power should be at least six months
- The warranty period should be up to one year

FMFB-A Recommended System Information

The bank recommends the below details for 20 kWh solar system.

S. No	System Basic Information	Product	Quantity
1	Solar Panel	Model FS380w mono panel / Imp 9.75A / Size 1950x992x40mm / Coated Steel Glass 3.2mm Tem pered / Terminal block IP65 with MC4 connector / Connect 13 pcs in series / EP 10 years 90%	60 pcs
2	PV Array Combiner	Model H4T/360V / Product size 360x345x145 mm / Multiple PV strings inputs and controller	1 pc

3	Controller	Model 360V/100A / Charging efficiency 90%-95% / Charging mode / Intelligent control / Various protection functions	1 pc
4	IGBT Sine Wave Inverter	Model TF30KW, 360 VDC / AC charger 15-20 A / 100% Germany brand IGBT materials / Product size 785x580x1197 mm / Weight 350 Kg	1 pc
5	Gel Battery	Capacity 200AH / Size 522x240x219 mm / Connect way each 30 pcs in series / 2 strings in parallel	40 pcs
6	Panel Rack	Solar panel bracket / Flat roof / Wind load 55 mm/s / Snow load 1.5 kn/m ² / Structure anodized aluminum + stainless steel	1 set
7	Cables	PV cable + battery cable / 1) 58 pcs 16 mm ² x35 CM battery cable / 4 pcs 16 mm ² x2 M battery cable / 25 mm 20 M power cable / 2) 4 mm ² PV cable 100 Mx2 pcs / 3) Terminals and MC4+2P 100 A power switch box	1 set

Available Space



Further information can be obtained at the address below during office hours [0800 to 1600 hours].

Expressions of interest must be delivered in a written form to the address below (muhib.kabiri@fmb.com.af) by [Jan 16, 2023].

[The First Microfinance Bank, Afghanistan (FMFB-A)]

Attn: [Ahmad Sohail Sadozaie] (ahmadsohail.sadozai@fmb.com.af)

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