



The First MicroFinanceBank
اولین بانک قرضه های کوچک

The First Microfinance Bank – Afghanistan

Request for proposal (RFP): -

Design & Supply of Solar Panel system for Bamyan Branch

Date of RFP issuance: Feb 1, 2020

Due date for proposal submitting: Mar 2nd, 2020

ABOUT THE FIRST MICROFINANCEBANK – AFGHANISTAN

The First Microfinance Bank-Afghanistan (FMFB-A) started operations in 2004 and is part of the Aga Khan Agency for Microfinance (AKAM), which has financial institutions operating in over 15 countries throughout the developing world. It is affiliated with the Aga Khan Development Network (AKDN), a group of nine development agencies working in health, education, culture and rural economic development primarily in Asia and Africa.

Our primary objective in Afghanistan is to contribute to poverty alleviation and economic development through the provision of sustainable financial services to the poor and underserved. Since 2016, we are a member of the Global Alliance for Banking on Values (GABV) – an independent network of banks using finance to deliver sustainable economic, social and environmental development. Our values- based banking agenda focuses on providing affordable financial services that promote entrepreneurship, agriculture, incremental housing and clean energy in Afghanistan. The First Microfinance Bank-Afghanistan is operating in 14 provinces through 38 branches and 9 loan processing offices covering 80 districts.

INTRODUCTION

- A The First Microfinance Bank – Afghanistan is seeking proposals for the provision of the Services described in *RFP Schedule 1 – Statement of Requirement*.
- B Each Bidder to this RFP is expected to:
- (i) fully inform themselves on all aspects of the work required to be performed;
 - (ii) submit its proposal on the template provided at *RFP Schedule 2 – Proposal*, including the signed Declaration by Bidder at the end of *Schedule 2*; and
 - (iii) submit its proposal in accordance with *RFP Schedule 1 – Statement of Requirement* and with due note of *RFP Schedule 5 – Evaluation Criteria*.
- C Each Bidder, by submitting its proposal, agrees that the proposal is subject to the RFP Schedule 4 – Conditions of Request for Proposal, and agrees to comply with those conditions. Acceptance of a proposal will occur only when a contract is executed. The contractor should and must adhere to the AKAM's Graphic Standards Manual guidelines identified in RFP Schedule 3 – FMFB-A Special Conditions of Design/Project of Proposal and the contract at RFP Schedule 6 - Contract Conditions.
- D Bids from international organisations may be considered. However, priority is given to suitably qualified tenders from national organizations.

1. THE PURPOSE OF RFP

The First Microfinance Bank, Afghanistan (FMFB-A) is soliciting proposals from a qualified contractor to design, fabricate, deliver, install, and maintain a rooftop utility-interactive solar photovoltaic system.

1.1. Project: Roof Mounted

1.2. Location: Bamyan City, Afghanistan

2. PROJECT BACKGROUND

2.1. Objective. 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 30 kWh AC per year (30 kWh daytime, 10 kWh nighttime) at the point of interconnection, approximately 35 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 30 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.

2.2. Scope. 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.

2.1.1 Design Guidelines for Roof Mounted.

Design Guidelines for Rooftop PV. Contractor shall develop a design for a new photovoltaic system at Bamyan 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 Bamyan city fire department.

2.1.2 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 30 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.

2.1.3 Production Metering. The project shall have:

- At least one production meter at POI.

2.1.4 Construction. Perform all construction necessary for the successful installation of the system based upon the design generated from 2.2.1., 2.2.2., and 2.2.3.

3. Roles and Responsibilities.

3.1 The contractor responsibilities:

The contractor is required to provide:

- Design concepts
- Construction documents and engineering calculations that are signed and Sealed by a licensed architect or engineer
- Submittals for materials and products
- Construction materials, equipment and labor
- Design and construction supervision / contract management
- Quality control plan (QCP)
- Safety plan
- Inspections and tests (per QCP)
- Manuals (design calculations, operation/maintenance, shop drawing, etc.)
- Commissioning of project
- Mentoring and training tribal building operating staff for operation and maintenance
- Operation and Maintenance during first year and optional service plan after the first year

3.1 The FMFB-A Responsibilities:

- Review for approval design submittals and QCP
- Witness inspections and test witnesses to verify attainment of performance requirements
- Make progress payments for design/construction as agreed

4. PROPOSAL CONCEPT DRAWINGS AND SPECIFICATIONS SUBMISSIONS

4.1 **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.

4.2 **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

The proposed concept information shall include:

Equipment Information:

- System description
- Layout of installation
- Selection of key equipment and layout of equipment
- Performance of equipment components, and subsystems
- Specifications for equipment procurement and installation
- All engineering associated with structural and mounting details
- Controls, monitors, and instrumentation
- Operation and maintenance service plan

Installation Interconnection Information:

- Solar electric array orientation (degrees)
- Solar electric module tilt (degrees)
- Electrical grid interconnection requirements
- Integration of solar PV system with other power sources
- System type and mode of operation (utility interactive)

Performance Characteristics

- Shading calculation documentation
- Total system output
- Estimated kWh/month per array (shown over a 12 month period)
- Warranties and guarantees

Interconnection Agreement

- Provide confirmation that the PV systems will be designed to comply with applicable UTILITY interconnection requirements.

Cost

- Total bid price of project including operation and maintenance for the first year, and optional service plan after the first year.

5. DESIGN SERVICES

Design Services for this project shall require a schematic design submission, a design development submission, a check set submission and a construction document submission. A final set of as-built drawings shall also be provided to FMFB-A. These submissions shall be delivered to FMFB-A based on the project schedule submitted and approved by the bank. The design package shall include the following details (4.1-4.6).

5.1 Timeline/Project Schedule. Contractor is required to provide an estimate on project timeline and schedule.

5.2 Post Award Conference. Within 21 calendar days after receipt of the contract award, the meeting will be attended by FMB-A team members and the contractor's personnel. At a minimum, the prime contractor's project manager and foreman, the primary designer must attend. The meeting will be held at the project location. The purpose of the meeting will be to discuss the contractor's plan for completing the design and construction, including a construction schedule. A walk-through of the site will occur at the end of the meeting.

5.3 Specifications. A full set of specifications shall not be required for this project. However, specifications that express all information and demonstrate sufficient detail so as to direct the construction work outlined in this Statement of Work shall be required. The specifications shall include all equipment information, proposed installation and interconnection information, and performance characteristics of the system.

5.3.1 All drawings, estimates, calculations, and specifications shall be in English units.

5.3.2 The contract shall take into account a construction plan producing a minimum disruption of day-to-day activities, utilities, services, etc.

5.4 Construction Drawings

5.4.1 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.

5.4.2 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

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

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

5.5 **Calculations.** The contractor will provide the following calculations.

5.5.1 System Electrical Calculations. Provide with design development and again with 100% check set.

- PV Watts calculation
- System energy production calculation showing estimated monthly and yearly energy output for each array
- Energy value and project cash flow

5.6 **Registration Seals.** Each final working drawing and each submitted specification and calculation document shall be signed by, bear the seal of, and show the state certificate number of the architect and/or engineer who prepared the document and / or is responsible for its preparation.

6. DESIGN SUBMISSIONS

Awarded contractor will secure from governing agencies and the utility company all required rights, permits, approvals, and interconnection agreements at no additional cost to FMFB-A. The awarded Contractor will complete and submit in a timely manner all documentation required.

6.1 Design Reviews. For each design / drawing submissions, FMFB-A reserves the right to make comments and request changes after the receipt of the submission. Reviews will be made by FMFB-A staff. As part of its review, FMFB-A may offer submission reviews to local code officials. FMFB-A shall provide review comments within fourteen (14) calendar days of receipt of the 75% Design Development Submission and the 100% Check Set Submission.

6.2 Purpose. FMFB-A will review the contractor design submissions to verify adherence to contract requirements. Design reviews by FMFB-A are not to be interpreted as resulting in an approval of the contractor's apparent progress toward meeting contract requirements

but are intended to discover any information that can be brought to the contractor's attention that might prevent errors, misdirection, or rework later in the project. The contractor shall remain completely responsible for designing, constructing, operating and maintaining the project in accordance with the requirements of this Statement of Work.

7. Quality Control Plan

- 7.1 Content.** For each performance and installation requirement, the QCP shall identify: item/system to be tested, exact test(s) to be performed, measured parameters, inspection/testing organization, and the stage of construction development when tests are to be performed. Each inspection/test shall be included in the overall construction schedule.

The QCP is intended to document those inspections and tests necessary to assure FMFB-A that product delivery, quality and performance are as required. It also serves as an inspection coordination tool between the contractor and FMFB-A. An example of these inspections/tests is the final test/inspection for overall performance compliance of the system. Results from tests and inspections shall be submitted within 24 hours of performing the tests and inspections.

Performance tests will be conducted at the final commissioning/acceptance testing, and one year after the acceptance date. If performance is less than 90% at the one-year performance tests (measured using the same method as for project acceptance), contractor shall promptly troubleshoot and correct any malfunction or issues as necessary to return project to 90% measured performance or better. The contractor shall supply FMFB-A with detailed documentation of malfunction or errors and all corrective actions taken.

- 7.2 Submissions.** The QCP shall be prepared and submitted within 21 calendar days of the post award conference meeting and prior to any construction on-site. The QCP may be rejected as incomplete and returned for resubmission if there is any performance, condition or operating test that is not covered therein.
- 7.3 Updating.** During construction, the contractor shall update QCP if any changes are necessary due to any changes or schedule constraints. FMFB-A shall be notified immediately of any schedule and/or procedural changes.

7.4 Inverter and Controls

- 7.4.1** Each inverter and associated controls shall be properly installed according to manufacturer's instructions.

The inverter shall have at a minimum the following features:

- UL listed
- Peak efficiency of 96% or higher

- Inverter shall have operational indicators of performance and have built-in data acquisition and remote monitoring.
 - The inverter shall be capable of parallel operation with the existing AC power. Each inverter shall automatically synchronize its output waveform with that of the utility upon restoration of utility power.
- 7.4.2 Warning labels shall be posted on the control panels and junction boxes indicating that the circuits are energized by an alternate power source independent of utility-provided power.
- 7.4.3 Operating instructions shall be posted on or near the system, and on file with facilities operation and maintenance documents.
- 7.4.4 Provide detailed lock out /tag out instructions for all equipment.
- 7.4.5 Power provided shall be compatible with onsite electric distribution systems.
- Install inverters and control panels in most optimum locations with appropriate environmental protection. Roofs may be used if structurally sufficient. If inverters are mounted outside they shall be shaded from direct sun from 10 a.m. to 6 p.m. in the months of June to August and be able to be secured.
- 7.4.6 The inverter and system shall utilize an astronomical timer or other means to shut down the inverter during night time to avoid energy usage at night.
- 7.4.7 Warranty. A 10-year manufacturers' warranty shall be provided.

7.5 Control Panel to Solar Electric Array Wire Runs

- 7.5.1 Areas where wiring passes through ceilings, walls or other areas of the building shall be properly restored, booted, sealed and returned to their original condition.
- 7.5.2 Thermal insulation in areas where wiring is installed shall be replaced to "as found or better condition." Access doors to these areas shall be properly sealed and gasketed.
- 7.5.3 All field electrical devices shall have the capability to be locked as appropriate.

7.6 Lightning Protection. Provide surge protection on all electrical systems.

- 7.7 **PV System Installation Warranty.** The PV systems shall carry a ten (10) year workmanship warranty by both the manufacturer and the installer including parts and labor.

8. SHOP DRAWINGS/PRODUCT DATA

- 8.1 **Submissions.** The Contractor shall submit shop drawings and product data / submittals, catalog cuts, etc. as stipulated herein. Shop drawing/product data submissions to FMFB-A shall be made after review and approval by the contractor. All approved product data and shop drawings shall be delivered to FMFB-A in one submission electronically.

The contractor shall combine all product data submission material into hard copy manuals for reference during all phases of construction.

- 8.2 **Reviews.** Reviews of shop drawings and product data by FMFB-A are not to be interpreted as an approval of the Contractor's product selections. The contractor shall remain completely responsible for constructing the PV system in accordance with all contract performance requirements.
- 8.3 **Products for Submission.** The contractor shall provide shop drawings and product data for all systems, equipment and materials.

9. INSPECTIONS AND TESTS

- 9.1 **General.** The contractor shall perform inspections and tests throughout the construction process including: existing conditions/needs assessments, construction installation placement/qualification measurements and final inspections/tests performance certification. Periodic "quality" inspections shall also be conducted to support progress payments as identified in the contractor's QCP.
- 9.2 **FMFB-A Witness.** All inspections and tests, to verify documented contract assumptions, to establish work accomplishment, or to certify performance attainment shall be witnessed by FMFB-A and/or construction management (CM) and coordinated through the QCP.
- 9.3 **Final Inspections and Tests.** Tests shall include a commissioning of the array. Commissioning tests shall conform with the requirements in Section 7 (QCP). Commissioning shall be performed for the entire PV system. This data shall be used to confirm proper performance of the PV system.
- 9.4 **Documentation.** Inspections/tests required in the QCP shall result in a written record of data/observations. The Contractor shall provide two (2) copies of documents containing all test reports/findings. Test results shall typically include: item/system tested, location, date of test, test parameters/measured data, state of construction completion, operating mode, contractor inspector/ FMFB-A witness, test equipment description and measurement technique.

10. Project Closeout

- 10.1 **Preparation for Final Inspection and Tests.** The following steps shall be taken to assure the project is in a condition to receive inspections and tests.
- 10.2 **Record Drawings.** The contractor shall maintain on site the working record drawings of all changes/deviations from the original design. Notations on record drawings shall be made in erasable red pencil or other color to correspond to different changes or categories of work. Marked-up drawings shall always be maintained at the contractor's on-site construction office, available for FMFB-A and/or CM to review. Record drawings shall note related change order designations on impacted work. When shop drawings indicate significant variations over design drawings, shop drawings may be incorporated as part of record drawings. Review of record drawings may be required before monthly payments can be processed.
- 10.3 **Warranties and Guarantees.** Submit specific warranties and guarantees, final certifications and similar documents to FMFB-A upon substantial completion and prior to final payment. Include copies with operations and maintenance manual. All warranties shall be signed by a principal of the contractor's firm and sealed if a corporation.
- 10.4 **Maintenance Manual.** Provide a detailed operation and maintenance manual including diagram of system components, description of normal operation; description of operational indicators and normal status of each, table of modes of operation, safety considerations, preventative maintenance requirements, troubleshooting and corrective actions; sources of spare parts and cut-sheets for all components. The contractor shall prepare six (6) hardcopies and two (2) CDs containing the detailed Maintenance Manual. Submit to FMFB-A.
- 10.5 **Demonstration and Training.** Provide FMFB-A approved training for designated personnel in the operation of the entire photovoltaic energy system, including operation and maintenance of inverter(s), transfer switches, panel board, disconnects and other features as requested by FMFB-A. Instruct the designated FMFB-A personnel in removal and installation of panels, including wiring and all connections. Provide FMFB-A with written instructions and procedures for shut-down and start-up activities for all components of the system. FMFB-A shall be permitted to video tape this training for official use.

11. Operations and Maintenance Service.

- 11.1 Provide operation and maintenance of the solar array systems for one year. Work shall include all manufacturer recommended maintenance as well as a 12 month performance commissioning as outlined in in section 7.1 (QCP). FMFB-A shall be invited to witness all performance commissioning's. A maintenance log shall be maintained to note dates, equipment and issues being resolved. Contractor should be available within 48 hours to respond to natural disasters (extreme storm, hail, wind events) to inspect array for damage.

12. Selection criteria

The First Microfinance Bank, Afghanistan invites quotations from reputed firms/contractors to procure materials and services for the solar system of Bamyán branch located in Bamyán city.

- 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 (45) 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 performance guarantee will be collected from the winning company prior signing the contract and will be released 6 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

FMFB-A Recommended System Information

The bank recommends the below details for 30 kWh solar system.

S. No	System Basic Information	Product	Quantity
1	Solar Panel	Model FS380w mono panel / Imp 9.75A / Size 1950x992x40mm / Coasted Steel Glass 3.2mm Tem pered / Terminal block IP65 with MC4 connector / Connect 13 pcs in series / EP 10 years 90%	52 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	60 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

13. PAYMENTS TERMS

The schedule of payments is specified below:

1st Installment of 40% on finalization and acceptance of installing the 52 pcs of solar panels on the site by FMFB;

2nd Installment of 40% upon submission of an acceptable solar system;

3rd Installment/Final Payment of 20% upon submission of the final outputs, incorporating suggestions and recommendations from FMFB;

Payment Conditions

Payment shall be made in Afghani, not later than 30 days following submission by the vendor.

Payments shall be made to service provider bank account:

Bank name:

AC name:

AC No:

AC type: AFN

KEY DATES AND DETAILS	
EVENT	DATES
Closing Time for submission of Proposals	Mar 02th, 2021 at 4.00pm, Kabul time
Method to Submit Proposal	<p>Proposals must be submitted in hard copy, indicating the project name: Project name: Design & Supply of Solar Panel system for Bamyan Branch</p> <p>The Proposal is to be submitted to the Professional Services Department (PSD) of the bank (bank's address indicated below) by the closing time specified above:</p> <p>Professional Services Department The First MicroFinanceBank – Afghansitan</p>

	<p>Address: Lane 8, Kolola Pushta Road, District 4, Kabul – Afghanistan</p> <p><i>Note: Proposals lodged in any manner other than as detailed in the above paragraphs, or are submitted after the deadline shall be deemed to be invalid and may be excluded from consideration.</i></p>
Contact Persons	Mohammad Muhib Kabiri, Procurement Manager muhib.kabiri@fmb.com.af

Attachment



Design & Supply of Solar Panel system for Bamyan Branch





Summary of Relevant performance:

I hereby confirm to accept all terms & conditions of this RFP & declare that there are no deviations in my proposal and it is fully complying with the Specifications requested in this quotation.

Name: _____

Position: _____

Signature: _____

Company Name: _____