PREPARATION OF THE FEASIBILITY STUDY FOR SOLAR PANELS

TERMS OF REFERENCE

BOSNIA AND HERZEGOVINA/REPUBLIC OF SRPSKA

ENERGY EFFICIENCY PROJECT ADDITIONAL FINANCING

P143580-BA-BEEP-8906BA-RFP-CQ-CS-23-1-RS

1. BACKGROUND

Bosnia and Herzegovina is the Borrower, and Republic of Srpska, through a subsidiary agreement with the Borrower, has received additional financing from the World Bank toward the cost of the Energy Efficiency Project, and intends to apply part of the proceeds for consulting services. The project development objective is to demonstrate the benefits of energy efficiency improvements in public sector buildings and support the development of scalable energy efficiency financing models.

The objective of the Energy Efficiency Project's corresponds to goals underlined in the Law on Physical Planning and Construction of Republic of Srpska (Official Gazette of Republic of Srpska no. 40/13, 106/15, 3/16 and 84/19) and the Law on Energy Efficiency of Republic of Srpska, adopted in 2013.

The Energy Efficiency Project will support energy efficiency investments ("subprojects") in schools, hospitals and clinic centers. A small number of other public facilities (e.g., elderly homes, orphanages, other administrative buildings) may also be included. The component will finance energy efficiency upgrades, as well as related technical consultancy services (e.g., energy audits, technical and social monitoring and evaluation, technical designs, supervision and subproject commissioning). It is estimated that up to 32 public buildings are expected to be renovated within 4 years of the project implementation. These investments will reduce the energy consumption of selected public buildings, and demonstrate the economic viability of energy efficiency improvements, including reduced recurring energy costs and associated public expenditures. In addition, the subprojects will generate demonstrable co-benefits, such as reduced CO2 emissions and improved indoor comfort levels (e.g., improved indoor temperature, better lighting and indoor air quality).

Project Development Objective Indicators are: lifetime energy savings, development and implementation of scalable EE financing models.

Intermediate Results Indicators are: lifetime fuel savings, GHG savings, number of subprojects completed direct project beneficiaries, increase in end-user satisfaction, development and implementation of customized skills training for target female beneficiaries, reflows from EE repayments and captured energy cost savings.

The PIU within the Ministry of Physical Planning, Civil Engineering and Ecology will be responsible for preparation, coordination, management and implementation of the project, including procurement, contracting, and payments of all goods, works and services related to the project. These Terms of Reference define the nature and scope of an assignment for Feasibility study for solar panels.

2. OBJECTIVES AND GENERAL DESCRIPTION

New Law on Renewable Energy Sources was adopted in the Republic of Srpska ("Official Gazette of the Republic of Srpska", No. 16/22). The law introduced the category of consumer-producer, the so-called "Prosumer" and the category of renewable energy community, with the aim of increasing the number of electricity producers primarily for their own needs. End-consumers have the right to build and connect a power plant that uses renewable energy sources to the internal electrical installations of their facility for their own consumption, and the installed power of the power plant may not exceed the approved connection capacity of the end-consumer facility.

The law defines that for the installation of panels on buildings that have a building permit, it is not necessary to obtain a special building permit if the construction of a consumer-producer power plant using renewable sources of installed power up to 50 kW is performed as part of the renovation. In addition, it is possible that the fee directed to the Environmental Protection Fund, in accordance with the Law, among other things, can be used to finance the construction of a plant for own needs of the end-consumer.

Main objective of this assignment is to hire Consultant firm that will prepare Feasibility study for solar panels for the buildings that have been renovated within The Energy Efficiency Project additional financing (BEEP AF).

The Consultant firm will organize consultations with following stakeholders: Ministry of Spatial Planning, Civil Engineering and Ecology of Republic of Srpska, Ministry of Energy and Mining of Republic of Srpska and Environmental Protection and Energy Efficiency Fund of Republic of Srpska.

The PIU shall provide all available reports, necessary data and list of renovated buildings to the Consultant firm.

The consultant will be selected per Consultant's Qualification-Based Selection (CQS) and the World Bank Procurement Regulations for IPF Borrowers.

3. SCOPE OF SERVICES

The Consultant firm is expected to prepare Feasibility study for potential installation of solar panels to the buildings that have been renovated within BEEP AF.

Task 1. Desk analysis for 30 renovated public buildings

As part of this task, the Consultant shall:

a) conduct desk analysis for potential installation of solar panels to the 30 public buildings that have been renovated within BEEP AF based on available documentations that include detail energy audits, technical designs and other related documents,
b) based on the results of the analysis the Consultant shall propose 4 retrofitted education buildings and 4 retrofitted healthcare buildings to the PIU for approval (total 8 buildings),
c) the consultant should take into account regional distribution of public buildings, in a way that each proposed building should be selected from following regions: Banja Luka, Istočno Sarajevo, Trebinje and Bijeljina.

Task 2. Feasibility Study preparation

Based on results of Task 1. the Consultant is expected to conduct techno-economic analysis for cost-effectiveness of installation of solar panels for 8 selected buildings. As part of this task, the Consultant shall:

(1) Prepare Draft of techno-economic analysis that includes:

a) basic indicators of solar radiation and energy potential of the selected location;
b) the potential of the available roof surface for the installation of photovoltaic modules;
c) principle disposition and recommended types of photovoltaic modules;
d) estimated costs of investing in equipment and materials necessary for the construction of the power plant;
e) basic requirements and possibilities of connecting the plant to the electrical distribution network;
f) estimated costs of connection to the distribution network;
g) estimated maximum plant power;
h) estimated annual plant production;
i) estimated operating costs and maintenance costs.

(2) The consultant shall also:

a) analyze options (technical and CBA) of surplus electricity (which goes beyond the coverage of own consumption) feed to the public electricity grid,
b) analyze options and propose solution for the management of the surplus electricity produced by the PV modules, at the time the load of own consumption of the building is low (in particular at educational buildings, during summer time),
c) analyze options net metering, and billing as well as technical requirements of the power utility for grid connection,
d) analyze options (technical and CBA) for installation of a power buffer accumulator to extend the coverage of solar PV power used in the building.
e) analyze the capacities of the supplier market of solar applications (in particular PV) in RS (DED, installation), in combination with a market review of solar equipment available (import, sold) and costs for solar units.
f) consider recommendable 'standardized' technical solutions, in form of a 'conceptual design' of solar applications for typical buildings; e.g. in modules, such as solar PV unit for policlinic of 1,000 m², kindergarten 500 m², school of 2,000 m².

(3) submit Draft to the PIU for comments and approval;
(4) organize consultations with all stakeholders and make a record of any remarks and comments. The consultant will incorporate submitted comments to the Draft. The list of potential stakeholders for consultations will include the Ministry of Spatial Planning, Civil Engineering and Ecology of Republic of Srpska, the Ministry of Energy and Mining of Republic of Srpska and Environmental Protection and Energy Efficiency Fund;
(5) submit Final report including comments of stakeholders to the PIU for comments and approval.

4. REQUIREMENTS

4.1 Eligibility

All firms which meet the required criteria can participate in this selection of consultancy.

4.2 Key experts

All experts who have a crucial role in implementing the contract are referred to as key experts. The profiles of the key experts for this contract are as follows:

Key expert 1: Team Leader

- University degree in electrical, mechanical, civil or architectural engineering (at least 240 ECTS),
- Minimum 10 years of professional experience
- The consultant shall demonstrate experiences in planning and dynamic economic dispatch (DED) of solar applications (PV and solar thermal), at least 3 reference projects
- Good knowledge of Republic of Srpska energy services and renewable energy sources market and public sector
- Advanced computer skills (MS Word, Excel, Power Point)

Key expert 2: Energy Efficiency Expert – Electrical engineer

- University degree in electrical engineering (at least 240 ECTS)
- Minimum 5 years of professional experience
- The consultant shall demonstrate experiences in planning and dynamic economic dispatch (DED) of solar applications (PV and solar thermal), at least 3 reference projects
- Good knowledge of Republic of Srpska energy services and renewable energy sources market and public sector
- Advanced computer skills (MS Word, Excel, Power Point)

Key expert 3: Energy Efficiency Expert – Electrical engineer

- University degree in electrical engineering (at least 240 ECTS)
- Minimum 5 years of professional experience
- The consultant shall demonstrate experiences in planning and dynamic economic dispatch (DED) of solar applications (PV and solar thermal), at least 3 reference projects
- Good knowledge of Republic of Srpska energy services and renewable energy sources market and public sector
- Advanced computer skills (MS Word, Excel, Power Point)

Total expected number of person/day is up to 120.

5. OUTPUT/DELIVERABLES AND TIME SCHEDULE:

The output of this activity will include:

No.	Description	Duration of activity	Deadlines (after contract signing)
1.	Report 1 – Desk analysis	4 weeks	4 weeks
2.	Report 2 – First working Draft of feasibility study	8 weeks	12 weeks
3.	Report 3 – Final report of feasibility study	4 weeks	16 weeks

NOTE: All reports shall be prepared in Serbian.