

TERMS OF REFERENCES FOR THE MECHANICAL ENGINEER

Background

Public Sector Energy Efficiency Project derives from the Country Partnership Framework for the Republic of North Macedonia for the period January 2019 – June 2023. In Focus Area III- Sustainable Growth, planned investments in energy efficiency and renewable energy (RE) will directly contribute to the reduction of CO₂ emissions. The country aims to develop a more low-carbon energy sector and reduce its dependence on coal, creating a more secure and efficient energy supply. Public and private buildings retrofit for energy efficiency have significant potential for energy savings and reduced GHGs (which are five times higher than the EU average as a ratio of GDP) because of how much electricity and oil products they currently use.

The Project Development Objectives are: (i) reduce energy consumption in the public sector; and (ii) support the establishment and operationalization of a sustainable financing mechanism for the public sector.

The Project would include three components: (i) energy efficiency investments in the public sector; (ii) technical assistance (TA) and project implementation support; (iii) initial capital for the proposed Energy Efficiency Fund (or 'EE Fund').

The Project will provide sub-loans to municipalities for renovation of buildings under their management, improvement public lighting systems and/or renewable resources investments. In addition, it will support the Ministry of health in its efforts to make the buildings under its management more energy efficient. It will also support the process of creation and establishment of the Energy Efficiency Fund, as a long-term mechanism for providing funding for energy efficient projects. The project would cover operational costs associated with project implementation, and support project management.

A Mechanical Engineer will be hired under the PIU to assist MOF in all technical aspects of project implementation, including technical reviews of energy audit reports and ensure that they comply with national and international energy auditing standards and best practices, oversight of the detailed technical designs, renovation works and commissioning, development of technical norms to ensure consistent technical quality, formulation of energy saving measurement methodologies, and other technical functions as requested by the PIU Lead Coordinator. While the focus of the Mechanical Engineer will be on heating and cooling systems, the Engineer will be asked to also assume different tasks assigned by the PIU Lead Coordinator.

Scope of Services

The Objective of the assignment is to assist the PIU in:

- Support prospective PSEEP clients in the identification of investment project proposals;
- Ensure the preparation of energy audit documents in accordance with the criteria detailed in the OM;
- Evaluate results of energy audits;
- Coordinate and quality assure the preparation of the necessary preliminary and detailed engineering and design studies;

- Conduct, in close coordination with Procurement and Financial Management Operations Officers the final appraisal of the technical, financial, and economic feasibility of the proposed investments, including review of most cost benefit alternatives etc;
- Ascertain the compliance of the all investment project proposals with the regulations and/or requirements of the respective ministries of the Government and ensure that all necessary permits or licenses are obtained;
- Supervise the work of the technical consultants and works contractors, including: energy auditors, project designers, technical supervision companies, construction companies and commissioning consultants. The PIU will hire firms through a competitive process. The engineer will be required to review the audit report and provide comments on behalf of the PIU.
- Assess the existing building's heating, ventilation and air conditioning (HVAC) system and review the proposed design solutions provided in technical documents. Ensure that the proposed heating or HVAC solution or district heating system is feasible and appropriate for the project to achieve cost effective energy savings.
- For rooftop solar technologies installation, verify structural integrity of roofs/support structures and ensure adequate structural analysis are carried out as part of the design process.
- Based on early project experiences and inputs from the design firms, develop/propose technical standards and norms to be used in all future bidding documents to ensure a high and consistent quality.
- Update and further refine the methodology for determining the energy savings for each project for reporting purposes. The engineer will help develop methodologies for determining and monitoring energy savings, operational performance, and reasons for any variations between the audit energy savings estimates and actual savings (variance reports).
- Identify training needs for the auditor/design/construction firms based on early implementation experiences, audit/design/construction deficiencies, variation reports, etc. and managing the development and implementation of suitable training modules.
- Assist in bid evaluations for the energy audits, detailed design, renovation works and construction supervision to ensure that bids conform to the technical specifications in the bidding documents.
- Coordinating the monitoring of results indicators including the achieved energy savings.
- Ensuring that all local licenses, permits, standards, etc. are fully complied with throughout the building renovations.
- Carry out other technical studies, reports and assignments as requested by the PIU Lead Coordinator.

Necessary qualifications

- At least university bachelor's degree in Mechanical Engineering (thermal engineering will be an asset); Master's degree in this field shall be considered a plus.
- At least 5 years of professional experience in the energy, energy efficiency, project management, prior experience on preparation of detailed project designs.
- Experience in working with International Institutions-financed projects would be an advantage;
- Previous experience in implementation of Energy Efficiency Projects;
- Experience in solar PV installations and solar heating systems is an advantage.

- Excellent interpersonal skills, demonstrated ability to communicate effectively and strong writing skills. The Consultant must have experience working as part of a team, preferably in a leadership position, and have demonstrated ability to deliver complex tasks and resolve challenges that may arise.
- Should be proficient in key computer applications, e.g., Word, Excel, PowerPoint, have a strong client orientation.
- Excellent written and verbal communication skills in English and Macedonian language.

Working conditions

The Mechanical Engineer will be stationed in the PSEEP PIU premises in Skopje, but should be ready to hold numerous meetings in the field and work under pressure. Payment shall be made on a monthly basis, in accordance with the Contract provisions.

Duration

The Contract shall be concluded for 3 (three) years with the first 6 months set as a probation period. The contract may be extended, subject to Client's business needs and satisfactory performance of the Consultant.

Reporting

The Consultant will report to PIU's Lead Project Coordinator for the duration of this assignment. Notwithstanding the schedule for submission of deliverables beneath the Consultant shall bi-weekly report on work completed. The Mechanical Engineer will provide full support to the Lead Coordinator as requested.