

TERMS OF REFERENCE (TOR)

INDIVIDUAL CONSULTANT

INVESTMENT GRADE ENERGY AUDIT OF BENEFICIARY BUILDINGS

DURATION OF ASSIGNMENT: 6 MONTHS

DATE OF COMMENCEMENT OF SERVICES: AUGUST 25, 2022

1. INTRODUCTION

The Republic of Armenia received financing from the Eurasian Fund for Stabilization and Development (EFSD) toward the cost of the “Energy Efficient Regions: Introducing Mechanisms to Increase Energy Saving in Public Buildings and Promoting “Green Energy” Project”. The project development goal is to reduce energy consumption of social and other public facilities. The global environmental objective is to decrease greenhouse gas emissions through the removal of barriers to the implementation of energy efficiency investments in the public sector.

The objective of Project is to improve energy efficiency in public buildings by increasing the level of energy saving in public buildings, promoting the development and formation of infrastructure entities providing energy services, as well as raising awareness among representatives of regional authorities about the effectiveness, principles and mechanisms for attracting energy saving loans.

2. OBJECTIVE AND SCOPE OF WORK

The objective of the assignment is to perform energy audit in about 15 selected public buildings (hospitals, kindergartens, schools, universities etc.) to identify the status of energy performance, advice on potential cost-efficient measures pursuant to AST371-2016 Methodology for performing energy audit in residential and public buildings; ASR 3621-2013 Energy Conservation; Building energy passport. Basic rules. Standard forms. Thermal protection of buildings RACN 24-01-2016.

The scope of works includes:

- 1. Review the existing operational characteristics of the buildings proposed by the Employer (preselected by the Employer):** Through a series of meetings, site visits and stakeholder engagements, identify and establish the operating characteristics of the facility, energy system specifications, operating and maintenance procedures,

preliminary areas of investigation, unusual operating constraints, anticipated future expansions or changes, training needs and other concerns related to facility operations.

2. **Review existing documentation and management practice:** Review all available facility documentation, including all available architectural and engineering plans, facility operation and maintenance procedures and logs, and utility bills for the previous 3 years. The review should cover at a minimum:
 - a. Building energy intensity,
 - b. Fuel sources and consumption,
 - c. Building energy management policies (if any),
 - d. Utility bills,
 - e. Characteristics of the Building Automation System (if any) especially on monitoring of electricity consumption.
3. **Detailed inspection of site and preliminary energy audit:** After a thorough review of the construction, operation and management documentation, investigate the major energy consuming processes in the facility. The inspection and energy audit shall focus on all passive and active systems available on site. The energy efficiency measures proposed by the Consultant should ensure at least 20 percent saving after implementation of energy efficiency measures.

4. Preparation of the Investment grade energy audit report.

Reports content:

- Investment grade energy audit report shall include:
 - initial results of review of the existing characteristics of the building and existing documentation and management practice;
 - energy consumption data and analyzes;
 - building envelop and engineering characteristics and condition;
 - detailed proposed energy efficiency measures (including minimal requirements for devices and measures pursuant to Construction Norms of the RA);
 - technical-financial assessment of proposed energy efficiency measures;
 - energy passport of the buildings before and after implementation of energy measures;
 - summary of energy audit.

3. QUALIFICATION REQUIREMENTS

- Minimum 3 years of relevant professional experience in energy audit. International experience will be an advantage.
- Knowledge in energy policies and energy management procedures of Armenia will be an advantage.
- Experience with the ESCO business models (energy analysis and audits, energy management, project design and implementation, maintenance and operation, monitoring and evaluation of savings, property/facility management, energy and/or equipment supply, provision of service) will be an advantage.
- Experience in performing economic and financial feasibility analysis.
- Bachelor's degree in Engineering.
- Knowledge of Armenian, Russian, knowledge of English is a plus.

4. DELIVERABLES AND TIMELINE

Deliverable 1 - Investment grade energy audit reports. The Consultant shall submit Investment grade energy audit reports upon completion of mentioned reports within a month since issuing the information about the building by the Employer. Investment grade energy audit reports will be accepted by the Employer upon incorporation of comments and submission of acceptable version.

Deliverable 2 - monthly Progress Reports. The Consultant shall submit monthly Progress Reports reporting about the implementation of assignments specified in Para 2. The Progress Report will be accepted by the Employer upon incorporation of comments and submission of acceptable version.

Deadline for submission of comments by Employer – 5 working days after receiving the deliverables from the Consultant.

Deadline for submission of revised version of the deliverables, incorporating comments - 10-20 working days (depending on the quantity of Facilities).

All deliverables shall be submitted in Armenian, English and Russian and submitted electronically.

All deliverables shall be addressed to the Head of Technical Department Mr. Hrant Ter-Gabrielyan hrant.tergabrielyan@r2e2.am.

5. RESOURCES AND PERSONAL PROVIDED BY EMPLOYER

THE R2E2 FUND SHALL PROVIDE OFFICE SPACE, PROJECT RELATED DOCUMENTATION AND VEHICLE FOR SITE VISITS.

THE TEAM OF TECHNICAL DEPARTMENT OF R2E2 FUND WILL ASSIST THE CONSULTANT DURING THE IMPLEMENTATION OF ASSIGNMENT.

6. FORM OF CONTRACT - TIME-BASED CONTRACT.