REPUBLIC OF TÜRKİYE
MINISTRY OF ENVIRONMENT, URBANIZATION AND CLIMATE CHANGE
General Directorate of Construction Affairs

ENERGY EFFICIENCY IN PUBLIC BUILDINGS PROJECT
(P162762)

TERMS OF REFERENCE FOR
FOR AN IT SPECIALIST
(Ref: EEPB/WB/MOEU/PIU-IND-IT-01)

1. BACKGROUND

The Ministry of Environment, Urbanization and Climate Change has received financing from the World Bank toward the cost of the Energy Efficiency in Public Buildings Project (EEPBP) and intends to apply part of the proceeds for consulting services.

The project investments will focus primarily on the renovation of central public buildings with high energy consumption and shorter pay-back periods. The proposed project would be implemented through two components: (i) energy efficiency (EE) investments in central government buildings; and (ii) technical assistance (TA) and project implementation support.

The General Directorate of Construction Affairs (GDCA) under the Ministry for Environment, Urbanization and Climate Change (MoEUCC) has been delegated to assume overall responsibility for the project. This will include completion of the necessary activities to support project preparation as well as implementation for the five-year project period. In parallel, grant funding has been mobilized from the Clean Technology Fund (CTF) to help analyze the investment needs and potential of the central government buildings.

Through the Energy Efficiency in Public Buildings (EEPB) Project, approximately 500 public buildings will be renovated energy efficiently resulting energy savings. As the proposed projects aims to renovate public buildings with the highest energy consumption, the immediate direct beneficiaries would be the public sector as the budgetary savings from the investments, resolution of budgetary constraints for central government buildings associated CO_2 emissions reductions as a result of the energy savings (tons of CO_2 equivalent) and also users of the public buildings (administrative staff and society) and public communities in the catchment areas of the identified facilities.

The General Directorate of Construction Affairs (GDCA) established a project implementation unit (PIU) which is be responsible from overall implementation of the project such as selection of the buildings, procurement of the various contractors (e.g. energy audits, technical designs, renovation works, construction supervision, savings verifications, technical assistance or consultancies, etc.).

Within the scope of the Energy Efficiency in Public Buildings Project in every renovated building, an energy monitoring system (EnMS) is installed to monitor and measure the energy consumptions and the energy generation from the solar panels and trigenerations.

The consumed electricity and natural gas energy are collected and reported by using the meters and sub-meters installed in the relevant building. The energy monitoring system is built using software languages such as **BACnet MSTP, BACnet IP, ModBus MSTP or ModBus IP etc.**, which allow access to data collected via **Ethernet LON or WAN**.

The Energy Monitoring Systems enables the (i) automatic collection and recording of meter data, (ii) monitoring the data with an easy and understandable graphical interface, (iii) automatic generation of energy reports, (iv) comparison of targeted and consumed energy, (v) quick and easy detection of wasted energy, (vi) in case of energy consumption deviations, the system gives a warning.

MoEUCC is planning a central energy monitoring system (CEMS) and database at the ministry to allow the PIU to connect to the energy monitoring systems installed at the buildings renovated under the Project to support longer term measurement and verification (M&V).

Monthly monitoring data from EnMSs will include expected and calculated energy consumption (in kWh), expected energy production (in kWh), and savings (in kWh). The communication between the CEMS and EnMSs in public buildings will be facilitated by a fast TCP/IP-based communication network.

Within the framework of the Energy Efficiency in Public Buildings Project, an Information Technology (IT) **Specialist** (Ref: EEPB/WB/MOEU/PIU-IND-IT-01) will be employed at Project Implementation Unit of the General Directorate of Construction Affairs of Ministry of Environment, Urbanization and Climate Change (MoEUCC).

2. OBJECTIVES

The main objective of this assignment is to employ an experienced consultant as the IT Specialist of the GDCA's PIU to assist in the project implementation activities under the EEPB project as indicated below:

1. Determining the need for software for the effective, up-to-date, and efficient implementation of the World Bank Projects carried out under the Ministry, their progress in line with time, cost and project development targets and their effective monitoring.
2. Designing, developing, and evaluating the Central Energy Monitoring Software System, system component, software operation or program to fulfill the requirements.
3. Ensuring timely resolution of software/IT-related issues to enable the ministry to implement project activities in accordance with the plan.
4. Fulfilling the necessary follow ups/requests regarding the project results and output (monitoring and evaluation) indicators.

3. DUTIES AND RESPONSIBILITIES

The IT Specialist will be expected to carry out and deliver the following tasks:

A. Software system/application analysis, design, revision or maintenance:

1. To review the PIU's needs for the central energy monitoring system (CEMS) that will be developed to gather the data from the energy monitoring systems (EnYS) at the renovated buildings under the project, interview relevant companies, advise the PIU to adjust the Terms of Reference (TOR) system specifications, assist with the procurement in evaluation of proposals, advice during contract negotiations, help supervise the firm in the early months,
2. To ensure continuity of data collection from EnYS in buildings to CEMS in the main building of the Ministry,
3. To prepare an interface for monitoring data, filtering data, data analysis, data reporting, and editing user by authorized users,
4. To monitor and report data collected from EnYS related to renewable energy production and the consumption of electricity and natural gas (renewable energy, heating, cooling, etc.),
5. To service as the primary point of contact for system support and maintenance, including but not limited to break/fix, enhancements, upgrades, and integrations,
6. To conduct testing processes of the CEMS to ensure that it functions properly,
7. To review and update system applications including database, operating system etc. to ensure that they are compatible with current technology standards,
8. To ensure continuity and uninterrupted operation of the system as a whole.
9. To assist with data entry, analysis, and reporting as needed.
10. To provide support, maintenance and, if needed, revision and improvement services of the project management software system that has been already developed under the project.

11. To work closely with PIU to resolve technical issues and ensure smooth operations.
12. To participate in meetings upon the request of the PIU, if needed.

B. Prepare necessary documentation and software-based reports:

13. To prepare reports and provide necessary documentation about the work done in relation to the project implementation.
14. To make the necessary analyses to meet the software-based report demands, and develop the resulting user interfaces, report formats and related methods.
15. To ensure that the files and documents related to the tasks of PIU staff are recorded and organized rigorously. To keep the recording of all documents in hard and soft copies and in an orderly manner to meet the requirements of the Bank and to make all documents available for the annual post reviews and audits by Treasury Controllers. To support the PIU with providing justifications and explanations as requested during the regular post reviews/audits of the project.
16. To prepare the analysis and design documents of the applications to be developed.
17. To prepare and generate relevant data and reports as well as simple charts/figures related to the M&E tasks and progress reports of the project.

C. Staff training, capacity building and other tasks as needed:

18. To undertake the training needs of the personnel of GDCA for the implementation of activities related to his/her task under the Project.
19. To give necessary training for the effective use of software applications and to take part in the preparation of guidelines/manuals.
20. To perform other duties emerging under this Terms of Reference.

4. DURATION AND LOCATION OF EMPLOYMENT

The IT Specialist is expected to commence work from December 2023, with two months' probation period and a renewable 1-year contract, if performance is satisfactory, for the duration of the project. The services will be required on a part-time basis.

The position will be mostly based in Ankara. If required, and with the approval of GDCA, the specialist shall attend site visits under the scope of the project.

5. QUALIFICATION REQUIREMENTS

a. Technical Qualification
1. Bachelor's degree in the departments of Software Engineering, Computer Engineering or Electrical and Electronics Engineering.
2. Master's degree in Software Engineering, Computer Engineering or Electrical and Electronics Engineering is an asset.
3. Having at least 4 years of work experience in software development/ICT application in the public or private sector
4. Having at least 3 years of experience in ASP.NET, ASP.NET Core, Entity Framework and C# programming and taking an active role in at least 1 corporate project using these technologies.
5. Having knowledge of MVC, MVVM and MVP design patterns and taking an active role in at least 1 corporate project using these design patterns.
6. Having experience about data structures, object-oriented design, and programming
7. Having experience in using Git-based software version control system
8. Having experience in developing applications on relational database system (such as MS SQL, Postgre SQL, Oracle Database etc.)
9. Having experience in micro service architecture, web services, continuous integration (CI), container

architectures. (Docker, Kubernetes)
10. Having knowledge about multi-layered software architectures
11. Having knowledge about project management process.
12. Having experience in using any of the front-end technologies (such as JavaScript, jQuery, HTML5, CSS, Bootstrap etc.) is an asset.
13. Having experience in developing a project with one of the main front-end frameworks (such as Angular, React, VueJS etc.) is an asset.
14. Having knowledge about multi-tenant architecture and being involved in a project developed with multi-tenant architecture is an asset.
15. Experienced in GRPC, WCF messaging protocols,
16. Experience in development of software programs with .NET 5 and later versions will be an asset,

b. **Language Requirement**
   - Fluency in Turkish and English (both oral and verbal) is a requirement,

c. **Other Qualification**
   - Experience within interdisciplinary teams in project management and working experience with IFIs financed project experience would be an advantage,
   - Proficiency in key computer applications, e.g., Word, Excel, PowerPoint, have a strong client orientation,
   - Familiarity with Government of Turkey's relevant legal, administrative and bureaucratic procedures,
   - Excellent interpersonal skills demonstrated ability to communicate effectively and strong writing/reporting skills.

6. REPORTS

The Specialist shall submit brief monthly progress reports for approval of the PIU summarizing the Project-related activities, issues, and recommendations during the assignment.

7. HIRING METHODOLOGY

The consultant will be hired on the basis of the World Bank's "Procurement Regulations for IPF Borrowers" (July 2016, revised November 2017 and August 2018) ("Procurement Regulations"). The contracted consultant will function as IT Specialist of GDCA's PIU in Ankara. The contract will be signed between the General Directorate of Construction Affairs of MoEUCC or his designee. The recruitment of contract shall be a subject to "No objection" from the World Bank.

8. APPLICATION

The application should include a CV in the following format in Turkish and English together with a one-page cover letter should be delivered to the address below in person or by e-mail, indicating the title and the reference code of the applied position in the subject line. **The deadline for application is December 4, 2023; 4:00 p.m. local time.** Confirmation will be shared upon receipt of application.

Ministry of Environment, Urbanization and Climate Change
General Directorate of Construction Affairs
External Investments Department
Attn: Esra Turan Tombak (Project Director)
Mustafa Kemal Mahallesi, 2082. Cadde, No:52, 06510
Çankaya / Ankara Tel: 0 312 480 07 50
E-mail: ihale.dky@csb.gov.tr
web-site: web-site: https://www.kabev.org/

CURRICULUM VITAE

Name of Staff	**:**	
Profession	**:**	
Date and Place of Birth	**:**	
Civil Status	**:**	
Home Address	**:**	
Phone **home**	**:**	
mobile	**:**	
E-mail	**:**	
POSITION APPLIED	**:**	

KEY QUALIFICATIONS

Specific experience in:

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EDUCATIONAL BACKGROUND

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PROFESSIONAL EXPERIENCES
(Employment Record)

-
-

Language Proficiency **:**

1.	Excellent	Good	Poor
Reading			
Writing			
Speaking			

2.	Excellent	Good	Poor
Reading			
Writing			
Speaking			

3.	Excellent	Good	Poor
Reading			
Writing			
Speaking			

Computing Knowledge   :

Experience in:

-
-
-
-

Membership of Professional Societies :

References and transcripts   : AVAILABLE UPON REQUEST

Certification

      I, the undersigned, certify that to the best of my knowledge and belief, this biodata correctly describes myself, my qualifications and my experience.

Signature   Date