
**TERMS OF REFERENCES
for National Consultant**

Energy Management System

UNDP/GEF Project:

**Moldova Sustainable Green Cities – Catalyzing investment in sustainable green cities in the Republic of
Moldova using a holistic integrated urban planning approach**

Job title:	National Consultant in Energy Management Systems
Type of Contract:	Individual Contract (IC)
Assignment type:	National consultant
Section/Unit:	Environment and Energy Cluster
Duty Station:	Chisinau (Moldova)
Languages required:	Romanian, Russian, English
Starting Date:	May 2020
Duration of Assignment:	110 working days till December 2020
Payment arrangements:	Lump sum contract (payments linked to satisfactory performance and delivery of outputs)
Evaluation method:	Interview of shortlisted candidates

I. PROJECT BACKGROUND INFORMATION

The [objective of the project](#) is to catalyse investments in low carbon green urban development based on integrated urban planning approach, by encouraging innovation, participatory planning and partnerships between a variety of public and private sector entities.

The strategy of the project is to create, launch and support a new institutional mechanism called “Green City Lab” (GCL) as a vehicle for encouraging and supporting new innovative measures and approaches in addressing the urban development challenges and barriers. Green City Lab has to become the leading knowledge management and networking platform, clearing house, an facilitator of financing various green urban development projects, and a source of innovations and expertise to catalyse sustainable low carbon green city development in Moldova with a mission to transform Chisinau and other cities/towns in Moldova into modern green and smart European cities with improved quality of life for their citizens, while also demonstrating opportunities for sustainable economic growth.

The objective of the project is related to the transfer of best international practices of Energy Management Information System (EMIS) and testing it in a group of buildings with a possibility to establish a municipal and national data base on actual consumption of energy, energy raw materials and water in public buildings.

Context:

Energy management information system – EMIS is a computer program or an internet application serving as a basic tool supporting the energy management system in public and commercial buildings. EMIS is intended primarily for monitoring and analysing data on consumption and costs of energy and water in public buildings under the responsibility of local, regional, and the national levels. Nevertheless, irrespective of its primary purpose, its concept design is flexible which enables it to be used with equal success also for buildings which are the responsibility of other institutions and organizations, indirect budget beneficiaries, commercial buildings and public enterprises. The EMIS is designed using the relations data base platform (Oracle) and Web architecture, meaning that it can be accessed from any computer with an online connection using any Internet browsers available in the market. Also, it allows export of the data in XLS and other formats, thus providing data resource for any kind of advanced analysis. Additionally, EMIS has an integrated option of automatic data screening and if any result of the automatic analysis is critical, or out of the set limits (e.g., a dramatic increase in energy or water consumption) EMIS sends alert message to the person(s) in charge thus any unwanted and unnecessary energy or water usage and costs are avoided.

EMIS was developed initially by UNDP Croatia in 2006, within the UNDP Project "Removal of barriers for energy efficiency in Croatia. It is used worldwide in the country (on more than 13.000 public buildings in the system) and was also replicated in Republic of Serbia, Bosnia and Herzegovina. From 2020 the same platform was deployed by Moldova Sustainable Green Cities Project and is required to be tested on a group of 40 buildings in Chisinau. After testing period, EMIS platform is expected to be used in public and residential sectors on municipal as well as national level.

Basic **EMIS** functionalities are:

- Access to technical data about buildings
- Monitoring and control of energy and water consumption on a monthly, weekly or daily basis (monthly bills and/or meter reading)
- Easy access to information about the total amount of consumed energy and water, methods and places at which energy is consumed
- Calculations and analysis in order to identify the unwanted, excessive and irrational energy and water usage and identification of EE projects and opportunities for achieving energy and financial savings
- Verification of achieved energy and water savings
- Calculation of different energy consumption indicators
- Automated alerts on critical events and malfunctions
- Different user interfaces for each user role
- Advance database searching and filtering
- Excel, pdf data export, including preparation of predefined reports
- Assortment of different building types
- Custom definition of energy bills
- Collection of automatic energy usage readings and data from energy supplier billing databases
- Internal communication and alarming system

Legal context

- Law No. 139 (19.07.2018) on Energy Efficiency;
- Law No. 10 (26.02.2016) on promotion of Renewable Energy Sources;
- Law No. 128 (11.07.2014) regulating EE performance in buildings;
- Government Decision No. 896 (21.07.2016) including rules and norms for certification of energy performance in buildings.

II. DUTIES AND RESPONSIBILITIES

The Consultant will work in close collaboration with Chisinau Municipality, Energy Efficiency Agency (EEA) and under direct supervision of the Green Cities Project Officer and UNDP Country Office in Moldova. Under this activity national consultant is requested to provide full support necessary to predefine, test and pilot EMIS platform as well as providing required support to energy managers for further utilisation.

EMIS is intended to be used in following types of buildings:

- Buildings administrated by local self-governments (schools, kindergartens, municipal administrative buildings, sports centres, primary health care centres.)
- Buildings administrated by national authorities (buildings of public administration, courts, hospitals, gerontology centres, faculties, students' dormitories, military barracks, PUC's buildings, etc.);
- Buildings administrated by public services;
- Buildings administrated by indirect budget beneficiaries;
- Buildings administrated by other organizations and public companies;
- Residential sector building (s);
- EMIS can also be used or commercial buildings

The consultant will have the following responsibilities:

- Providing full support in configure and predefining data to be collected in EMIS platform;
- Providing full support in identifying public buildings in Chisinau (40) where EMIS will be tested;
- Provide full support in identifying residential sector building (s)/getting the agreement of the household association/ condominium and ensure active involvement during EMIS piloting phase.
- Collecting slow changing data for each building (non-technical):
 - a. Region, district, municipality;
 - b. Address of the building;
 - c. Buildings within buildings;
 - d. Building owner;
 - e. Building user;
 - f. Source of funding;
 - g. Owner and user persons in charge;
 - h. Contact person, etc.

Technical data:

- i. Surface area of building;
 - j. Number of floors;
 - k. Electricity supply (number of electricity meter, type of buyer, category of buyer, etc.);
 - l. Heating type (source of heating, energy source, etc.);
 - m. Total heated area, total volume;
 - n. Technical characteristics of the heating system;
 - o. Technical characteristics of the lighting system;
 - p. Operating processes in the building (food preparation, laundry washing, swimming pool, etc.), etc.
- Entering data from invoices for energy (electricity, district heating, SHW), energy sources (gas, LPG, coal, fuel-oil, crude, firewood, etc.) and water;
 - Providing support in negotiation with suppliers (Moldova Gaz, Apă Canal, Termoelectrica, Premier Energy) in order to import data directly supplied by energy/water providers;
 - Providing support in drafting ToR for smart meters acquisition to be installed at selected buildings where EMIS will be tested.
 - Providing support in translation and adoption of Technical guides for energy managers;
 - Providing support in EMIS utilization and Chisinau energy manager, end users, and other types of users;

III. EXPECTED DELIVERABLES AND ESTIMATED TIMING

The assignment will be carried out for 110 working days over a 10 months period from the date of starting of the assignment. The payments will be made as per the deliverables indicated below.

	Deliverables	Estimated timing
1	Configuring and Predefining EMIS platform with relevant data to be collected	By May 27, 2020 10 working days
2	Initiation of EMIS testing period: <ul style="list-style-type: none"> - Identification of buildings in cooperation with Chisinau Energy Manager; - Collecting slow changing data for each building (non-technical and technical); - predefine CO₂ conversion factors and primary to final energy factors - In cooperation with Chisinau energy manager and Energy Efficiency Agency, to set: <ul style="list-style-type: none"> o new coding system, to be used in EMIS platform; o types of groups of buildings, as well as types of buildings; o Types of principal building/facility users; o Database of suppliers (gas, water, heat, electricity, etc.) - Providing support in drafting ToR for smart meters acquisition to be installed at selected buildings where EMIS will be tested - Providing support in installation of smart meters in buildings. - Report related to negotiations with suppliers (Moldova Gaz, Apă Canal, Termoelectrica, Premier Energy) in order to import data directly supplied by energy/water providers 	By August 24, 2020 60 working days
5	<ul style="list-style-type: none"> - Support to Chisinau energy manager in implementation of EMIS at municipal level - Oversight the process of entering data from invoices for energy (electricity, district heating, SHW), energy sources (gas, LPG, coal, fuel-oil, crude, firewood, etc.) and water. For buildings where data will be collected manually provide guidance. 	By September 30, 2020 20 working days
6	<ul style="list-style-type: none"> - Providing support in translation and approval of Technical guides for energy managers; 	By November 30, 2020 10 working days
7	<ul style="list-style-type: none"> - Conceptualize and conduct Workshop related to first outcomes of pilot -project, tested on public buildings 	By December 22, 2020 5 working days
	<ul style="list-style-type: none"> - Final report, with lessons learned and recommendations for scaling up the EMIS at municipal and national levels. 	By December 22, 2020 5 working days

All the deliverables will be prepared in Romanian, working language will be Romanian and/or Russian interpretation.

IV. QUALIFICATIONS AND EXPERIENCE REQUIREMENTS

Academic qualifications:

- University degree in Energy, Environment, Engineering, IT or other closely related field.

Experience:

- At least 3 years of professional experience in providing advice to electronic management systems, Information Technologies or energy engineering;

- Proven experience in managing projects/initiatives related to smart technologies, as well as required tools in energy management
- Sound knowledge of energy efficiency, energy saving and use of renewable energy development in residential sector.
- Good knowledge of electronic communications through wired and wireless networks

Competencies:

- Demonstrates integrity and fairness by modelling UN values and ethical standards;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
- Ability to meet deadlines and prioritize multiple tasks;
- Excellent communication skills; Excellent analytical skills; Strong oral and writing skills;
- Excellent computer literacy (Word, Excel, Internet, Power Point) and other advanced programming tools, would constitute an advantage;
- Ability to work independently as well as part of a team.

Language skills

- Proficiency (verbal and written) in Romanian and English; working level of Russian will be an asset.

V. PAYMENT MODALITIES

The consultant will organize and facilitate the implementation of all project advisory activities as described above; his/her payment will be lump sum amount based, disbursed in instalments upon satisfactory performance and approval of deliverables.

VI. APPLICATION PROCESS

Applicants shall submit the following four documents:

Required

- Offeror's Letter confirming Interest and Availability, as per Annex 2
- CV, including information about past experience in similar assignments and contact details for three referees
- Brief description of approach to work/technical proposal of why the individual considers him/herself as the most suitable for the assignment, and a proposed methodology on how they will approach and complete the assignment.
- Financial proposal (in USD, specifying the total lump sum amount as well as the requested amount of the fee per day). Financial proposal template prepared in compliance with the template in Annex 2

Incomplete applications will not be considered.

If an applicant is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under Reimbursable Loan Agreement (RLA), the applicant must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP.

VII. ANNEXES TO THE TOR

Annex 1- Individual Consultant General Terms and Conditions

Annex 2- Offeror's Letter to UNDP confirming Interest and Availability