
**TERMS OF REFERENCES
for National Consultant**

Energy Management Information 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 Information 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:	18 May 2021
Duration of Assignment:	60 working days till September 2021
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 analyzing 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. EMIS will be piloted on 17 buildings from Chisinau

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

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 Manager and UNDP Country Office in Moldova. Under this activity national consultant is requested to provide full support necessary to pilot EMIS platform as well as providing required support to energy managers for further utilisation.

The consultant will have the following responsibilities:

- Providing full support during the smart meters and concentrator connectivity in order to make the platform fully operational;
- Providing full support in configure and predefining data to be collected in EMIS platform;
- In case if Chisinau Municipality will decide to integration other buildings in EMIS, consultant will have the responsibility in 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 EMIS utilization and Chisinau energy manager, end users, and other types of users;
- Develop a comparative analysis on benefits and bottlenecks related to integration of EMIS at national level.
- Develop in close collaboration with Chisinau municipality, Ministry of Economy and Infrastructure (MEI), Energy Efficiency Agency (EEA) and other responsible stakeholders, an agreed Roadmap, as well as the required justification, regarding further utilization of EMIS Platform at National Level. The roadmap will cover, technical, financial, and legal aspects, and will be commonly agreed with MEI, EEA, and Chisinau Municipality. The methodology and table of content will be preliminary agreed with Green Cities Project.
- Conceptualize and conduct Workshop with main stakeholders related to first outcomes of pilot -project.

III. EXPECTED DELIVERABLES AND ESTIMATED TIMING

The assignment will be carried out for 6 working days over a 5 month period from the date of starting of the assignment. The payments will be made as per the deliverables indicated below.

	Deliverables	Estimated timing
1	Initiation of EMIS launch and testing period: <ul style="list-style-type: none"> - Full support provided during the smart meters and concentrator connectivity in order to make the platform fully operational. - Support provided in configuration of virtual smart meters for each building, in EMIS. - Data collection, data input and data analysis report for all and each building part of the EMIS. - Organizing continuous training sessions (twice per month) in common with EMIS developer to main stakeholders (MEI, AEE, Chisinau Municipality) 	By June 30, 2021 30 working days
2	<ul style="list-style-type: none"> - Report on comparative analysis on benefits and bottlenecks related to integration of EMIS at national level - Roadmap for implementation of EMIS at municipal level - Workshop related to first outcomes of pilot -project 	By August 31, 2021 20 working days
3	<ul style="list-style-type: none"> - Final report, with lessons learned and recommendations for scaling up the EMIS at municipal and national levels, commonly agreed with MEI, AEE and Chisinau Municipality 	By September 30, 2021 10 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, or other closely related field.
- Specialized certificates in Energy Management, smart technologies, wireless technologies, would constitute an advantage.

Experience:

- At least 5 years of professional experience in providing advice to energy management system and energy engineering.
- Proven experience in managing projects related to smart technologies, as well as required tools in energy management.
- Proven knowledge of energy efficiency, energy saving and use of renewable energy development in residential sector.

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) 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:

1. Proposal:
 - (i) Explaining why they are the most suitable for the work;
 - (ii) Provide a brief methodology on how they will approach and conduct the work (if applicable);

2. Personal CV, including information about past experience in similar assignments and contact details for referees (at least 3);
3. Offeror's Letter confirming Interest and Availability, incorporating the Financial Proposal (in USD, specifying the total lump sum amount as well as the requested amount of the fee per day) in Annex 2.

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 2- Individual Consultant General Terms and Conditions

Annex 3- Offeror's Letter to UNDP Confirming Interest and Availability