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Terms of Reference

UNDP/GEF Project: Moldova Sustainable Green Cities – Catalysing investment in sustainable green cities in the Republic of Moldova using a holistic integrated urban planning approach

Development of the Electric Vehicle charging infrastructure in Moldova
Phase II, EV fast-charging stations

Duty station: **Chisinau, Moldova**
Contract type: **Low-value, Performance-Based Payment Agreement**

In Moldova, the transportation sector is responsible for 14% of all greenhouse gas emissions. Moreover, transportation is the main contributor to the air pollution and, currently, the air pollution that comes from the transportation sector is much higher than the one coming from the industry (https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_GHG%20Emissions%20Factsheet_Moldova.pdf).

At the same time, considering the growing tendencies in the national economy, the number of cars on the road is increasing. According to the official statistics, by the end of 2019 there were more than 1 million vehicles registered in Moldova (out of which approx. 240 thousand were in Chisinau). 83 % of the existing vehicles are 11 years old or more (out of which 50% are 20 years old or more). The aging vehicle park increases the air pollution and premature death among Moldovan population. It is estimated that the economic costs of the premature deaths are 3.2 billion dollars according to WHO.

Meanwhile, there were 14,444 hybrid vehicles registered in Moldova at the end of 2019 (of which 5,278 were registered during 2019), and 358 fully electric vehicles (EV) at the end of 2019 with an increasing trend for both types of vehicles. The increase in hybrid and EV interest is linked to customs incentives, as well as the marginal price difference compared to an ordinary gasoline vehicle. The major problem for the electric vehicle or plug-in vehicle users is still the lack of proper charging infrastructure (especially fast charging units), which ultimately decreases the attractiveness for this type of transportation.

Electric Vehicles (EV), with zero emissions, are the most environmentally friendly option currently available on the market. For the last 10 years, the global development of the EV infrastructure increased substantially. Statistics report an increase in registration of electric cars in recent years. The sales of new electric cars have reached a new global record in 2018, with 1.26 million units sold worldwide, or 74% more than in 2017, when 727,000 units were sold. The EV segment has thus recorded one of the largest increases in all segments of the car manufacturing, a growth that motivates car manufacturers to invest in this direction. EV import in Georgia, for example, only between 2017-2018 increased from 63 EVs to 1423 EVs. This massive jump occurred as a direct result of the development of charging stations (since the end of 2016).

In comparison, in 2018, there were 13 public charging stations in Moldova and by the end of 2019 the number increased by 34 charging stations. During the 1st phase of the project related to the Development of the electric vehicle's infrastructure in Moldova, implemented by UNDP Moldova

Sustainable Green Cities project, another 60 EV chargers will be functioning by the end of 2020. Out of the proposed 60 stations, 22 are already installed.

II. Project Background Information

The goal of this assignment is to select a responsible party (private sector company) based on a competitive process willing to participate in the development of the Electric Vehicle charging infrastructure in Moldova in partnership with the UNDP-GEF Project titled: **Moldova Sustainable Green Cities – Catalysing investment in sustainable green cities in the Republic of Moldova using a holistic integrated urban planning approach (further in the text as MSGCP).** The proposed assignment is linked with the joint UNDP - Energy Efficiency Agency Project "Development of the Electric Vehicle charging infrastructure in Moldova – Phase II, EV fast-charging stations" aiming at promotion of the electrical vehicles use through installation of at least 3 fast-charging stations in the country.

During the duration of this partnership, the selected responsible party will report to the Green Cities Project Manager, Project board and to the Environment, Climate Change and Energy Cluster in UNDP Country Office.

III. Duties and responsibilities:

The responsible party is requested to collaborate with Green Cities Project in the ***Development of the Electric Vehicle charging infrastructure in Moldova Phase II, EV fast-charging stations*** by installing, maintaining and managing of 3 EV fast-charging stations in the country. The UNDP and responsible party will collaborate in the framework of the project proposal developed by responsible party based on the Low-value, Performance-Based Payment agreement.

Performance-based payments are a type of agreement between UNDP and a responsible party to provide funding upon the verified achievement of an agreed measurable development result. No advances are provided, rather payments are made only upon the verified achievement of agreed results. The responsible party under this Agreement shall self-finance all activities until the Result(s) are achieved and validated by the Project board. Early termination of the agreement can be envisaged if certain milestones/timeframes/etc are not met. Early termination may also be triggered through lack of adherence to UNDP's Social and Environmental Standards. The responsible party will be capacity assessed (according to UNDP policies), and a due diligence exercise will be done for private sector entities. The responsible party shall get into partnership (if needed) with local public authorities and/or private sector companies for project implementation.

The responsible party will have the following responsibilities:

1. Propose the exact locations in Chisinau, Leuseni and Briceni, according to the developed criteria and proposed locations as per Annex 1. The proposed locations will be validated with UNDP prior to Agreement signature and constitute an integral part of an Agreement.
2. Follow all legal steps needed for installation and operation of the EV charging stations.
3. Ensure procurement of 3 EV fast-charging stations and all related safety kits following the minimum technical specifications listed in Annex 1.
4. Ensure on its own cost installation and operational management of 3 EV fast-charging stations as part of this project (2 in the country and 1 in Chisinau), including incorporation of a unified billing system.
5. Ensure the design of the parking lot, the charger itself and information panel.
6. Provide assurance to UNDP that at least 30 % of the electricity needs for fast-chargers will be generated by renewable energy sources. A copy of a contract for at least 3 years should be provided.
7. Provide a written assurance to UNDP that the responsible party will successfully operate and maintain the installed 3 EV fast-charging stations during 5 years after project end. Non respecting of this clause will lead to reimbursement to the UNDP the allocated financial resources.
8. EV fast-charging stations network operator should provide monthly data in Excel or other agreed formats to the MSGCP, Energy Efficiency Agency and Ministry of Economy and Infrastructure. The data should cover the number of charging's per station, the number of charging's per total,

consumed kWh per station, per vehicle and total, each vehicle charging time, and average charging time.

9. Provide logistic and other type of support to the evaluation committee, comprised from UNDP and project board representatives, at the end of the project implementation, in order to assess the quality of the performed works.
10. Develop monthly reports on the work performed and a final report which should be presented to the project board.

Note:

a) UNDP Moldova through the Green Cities Project will ensure co-funding of the project for procurement of EV fast-charging stations hardware and safety kit (type B protection).

b) The location of the charging stations will be determined by responsible party itself with the condition that it respects the developed criteria for installation and will constitute an integral part of an Agreement. Installation of higher power chargers (ex. CHAdeMO/ CCS with higher power) or the highest share of energy obtained from renewable sources of energy mix will be considered an advantage.

Criteria for selection and installation of the fast-charging stations in Moldova

Criteria for selection and installation of the fast-charging station for electric vehicles shall meet the following requirements:

- Fast-charging stations should be publicly accessible to all users and work in 24/7 regime.
- A dedicated enough parking space should be delimited (approx. 2 car parking places), so that electric vehicles with charging sockets installed in different parts of the vehicle can have access to the electrical charger;
- The fast-charging station must be easy to use to ensure relatively high mobility of electric vehicles.
- The selected place should be visible and accessible to all EV users. An information board should be installed containing the instructions for use, as well as MSGCP, GEF, Government and UNDP logos. Also, the parking lots should correspond to the draft design template for information board and the parking lot provided in Annex 2 (or any other agreed with UNDP).
- All wiring and power-up works to install the fast-charging station and ensuring billing of charging service shall be conducted by responsible party. At the same time, to ensure security and accessibility, it is necessary to equip the station with security and lighting systems.
- At the time of installation of the electrical equipment, all safety rules must be observed in accordance with existing regulations and by observing the installation requirements prescribed by the manufacturer. Supervision of compliance with mandatory requirements will be entrusted to an authorized technical officer.
- EV fast-charging stations should be accessible for people with special needs. These include the height and location access.

IV. Expected Deliverables and estimated timing

The assignment will be carried out in maximum **6 months** after signature of the agreement. All the deliverables shall be submitted within the timeframe shown in the table below:

Deliverable(s) and Performance-Based Payment Terms

Deliverable(s)	Expected Date of Achievement	Eligible Cumulative Payment (USD)	Value of Payment	Penalties
Deliverable 1	30 November 2020			If the milestone/target results are not achieved, no payment will be given.
One fully operational, fast-charging station (50 kW DC/AC) with incorporated billing system (or similar by value) installed in Chisinau				
Deliverable 2	30 November 2020			
Two fully operational, fast-charging station (50 kW DC/AC) with incorporated billing system (or similar by value) installed in Leuseni and Briceni				

V. Institutional arrangements:

The responsible party will work under the direct supervision of the MSGC Project Manager. The responsible party shall take overall responsibility on the quality and timeliness of project implementation process within its competency.

- **Staffing**

The responsible party shall indicate lead experts per areas of expertise. If the qualifications of certain expert correspond to the requirements of more than one area of expertise, than the expert can be proposed for that respective area, too. The Company will ensure that all other necessary staff and additional technical resources required for efficient finalization of the work will be provided (e.g., logistical support for organizing various meetings and conducting field work).

- **Timeliness and quality**

The responsible party's performance shall be assessed based on timeliness and quality of services. The responsible party shall be notified of any deviation from the agreed schedules and standards, pursuant to which it will be required to remediate its performance. In case no satisfactory remediation shall be obtained UNDP reserves the right to terminate the contract.

- **Language**

The draft project proposal and all its complementary documents shall be endorsed in English. The final reports shall be submitted in English or Romanian.

- **Legal and other requirements**

The content of the requested documents shall conform to the pertaining relevant legislation in the country and the international best practices and models.

- **Methodology**

Interested bidders should provide in their project proposal the Methodology of EV fast chargers project implementation. Enough detail should be given to technical and safety parameters of the equipment, places for charger's installation, billing system. The responsible party should demonstrate that the proposed project will be sustainable in time (min. 5 years after project end up). The responsible party will ensure that all other necessary staff and additional technical resources required for efficient finalization of the work will be provided (e.g., logistical support for organizing various meetings and conducting field work).

- **Additional costs**

UNDP will cover only the costs for equipment: EV fast charger hardware and safety kit. The costs associated with installation of EV fast chargers, maintenance, billing system or other operational/management or other types of costs should be covered by the responsible party from their own resources.

- **Submission of data, reports and other material produced**

The responsible party will report on its progress in achieving all agreed objectively verifiable indicators and minimum progress thresholds in accordance with the reporting schedule and format specified in the Results Reporting Format as part of the Agreement. Progress reports will include financial and narrative information; final report will contain evidence of results achievement. All primary data, reports, and other documentation produced during this assignment shall be made available to UNDP in appropriate electronic format (word, excel, PDF, etc.) depending on the nature of its content.

- **Consultations process**

The responsibility for facilitating the consultation process for the purposes of completion of tasks outlined hereto will be primarily responsibility of the responsible party.

- **Sustainability of results**

UNDP must be able to demonstrate that the results to be achieved are sustainable and of demonstrable quality. In this respect, post agreement covenants may be necessary to conclude in order to ensure the continuation of activities and results following the conclusion of the agreement.

VI. Minimum qualification requirements:

- At least 5 years of experience in the electric vehicle network management, renewable energy, IT, electric equipment market, services in electric installations or providing services in this area of interest;
- Proof of all necessary licenses and authorizations for electric works, or proof of a contract for performing electric works with a licenced company;
- Minimum 3 projects implemented in the past 3 years rendering an investment of at least 75,000 USD or equivalent;
- At least a 3-year contract with a Renewable Energy Production Company for min. 30% renewable electricity purchasing for the EV chargers.
- Proof of available locations for EV fast-chargers installation (Contract, Partnership agreement, etc.). Failure of provision of such documents will lead to applicant disqualification.
- Proof of IEC 61851-1, IEC 61851-22, IEC 61851-23 certificates. Failure of provision of such documents will lead to applicant disqualification.

- **Project proposal**

The project proposal should contain the following minimum information:

- Company profile, history and Registration certificate, and other relevant certificates
- Detailed description of the methodology of work, collaboration between partners, opportunities and risks.
- Proof of available locations for EV charger's installation (Contract, Partnership agreement, etc.).

- At least a 3-year contract with a Renewable Energy Production Company for min. 30% renewable electricity purchasing for the EV chargers
- Proof of all necessary licenses and authorizations for electric works;
- Technical description of the proposed equipment (including safety related equipment).
- Mandatory CE certification mark (IEC 61851-1, IEC 61851-22, IEC 61851-23).
- Quality certificates of the proposed equipment
- Description of the billing system operation. Responsible parties and distribution of responsibilities (e.g. if the billing system will be integrated in the existing billing system of any partners, then a proof of agreement between responsible party and location owner on integration of EC charger into its existing billing system (or similar) is requested).
- Changes in EV information board, station and parking lot design (if any).
- Proof of available financial resources to implement the project and deliver the results.
- A detailed estimated budget of works per 1 EV fast-charger.
- A detailed budget for the whole project.

Technical specifications of the EV chargers

Technical parameters	Value
Input voltage according to the power supply network	Min. 400 V (+ 10/-15%), 3-phase
Power (KW) per station	50 kW (DC) 22 kW (AC)
Output voltage	DC: 50 - 500V AC: 400V
Charging current	DC: 125 A AC: 32 A
Grounding	TT, TN-S, TN-C-S
Frequency	50 Hz
Min. working temperature [°C]	(-30)
Max. working temperature [°C]	+ 55
Protection class	IP54/IP55 (IEC 60529), IK10 (IEC 62262) demonstrated through testing reports
Humidity relative rate	5-95% without condense
Configurations	- RFID: ISO/IEC 14443A/B, ISO/IEC 15392 or ISO/IEC 15393 and ISO 15118 user identification, Remote authorization - Minimum 3 anti-vandal connectors/plugs: 2 (two) DC's (CCS and CHAdeMO) with attached cable and 1 (one) AC 32A; - Floor mounting (with pedestal) - Editable metal case (ready for branding) - Ergonomic design - Visible, simple and easy to understand use instructions.
Safety	- Type B protection included.
Network connection and Certifications	
Network connection	10/100 Base-T Ethernet, Wireless, GSM/GPRS
Network integration	OCPP 1.5S/ 1.6J or OCPP 2.0
Operations	- user authentication - resending data to record upload data - monitoring the status of the charging station - possibility to optimize charging time through software - remote (free) access - billing system ready
Certifications	- Mandatory CE certification mark (IEC 61851-1, IEC 61851-22, IEC 61851-23). - Other standards will constitute an advantage example: EV/ZE ready, IMQ IDIADA etc

Note: Technical solutions that will add value to the proposed technical specifications will be considered an advantage.

Important Notes:

1. The proposed EV fast chargers should use an energy mix composed of **min. 30%*** of energy obtained from renewable sources (e.g. wind, photovoltaics, biomass/biogas co-generation).
2. The proposed EV fast chargers should have the technical parameters of being integrated in any EV charging stations network (including any billing system).
3. The chargers should be installed in the following locations:
    - Mun. Chisinau: 31 August 1989, nr. 80 (close to UN parking space) or propose an alternative location in the Chisinau city centre;
    - Leuseni (border with Romania, but not more than 10 km range from the custom). The proposed location is indicative, and the bidder should indicate the exact location where the charger will be installed.
    - Briceni (the city or intersection of the R11 and M14, but not more than 10 km range from the city centre). The proposed location is indicative, and the bidder should indicate the exact location where the charger will be installed.

    If a different location is proposed, the responsible party should provide a detailed explanation which should be validated by UNDP.
4. All wiring and power-up works (incl. necessary authorizations and permissions) to install the charging station will be done by the bidder on their own costs. The costs for wiring, power-up and any other works needed per each location should be provided. The billing of charging service (inter-operability with charging network operator) shall be also conducted by the bidder on its own resources (incl. access to the internet network).
5. At the time of installation of the electrical equipment, all safety rules must be observed in accordance with existing regulations and by observing the installation requirements prescribed by the manufacturer. Supervision of compliance with mandatory requirements will be entrusted to an authorized technical officer contracted and paid by the bidder. A final receipt of the works must be performed based on national requirements/ legislative and normative acts.
6. Technical/financial/logistical solutions that will add value to the proposed specifications will be considered as an advantage.

N.B. As the required minimum energy mix composed of energy obtained from renewable sources should be at least 30%, the proposals with higher ratio will be considered as an advantage.

Draft design for Information board and parking lot