

TERMS OF REFERENCES

“Transfer of Czech and West European best practices for the piloting of energy cooperatives in Moldova”

Job title:	International Consultant in distributed energy systems (energy cooperatives)
Type of Contract:	Individual Contract (IC)
Assignment type:	International consultant
Section/Unit:	Environment and Energy Cluster
Duty Station:	Homebased with at least three (3) to 5 (five) missions to Chisinau (Moldova)
Languages required:	English, working level of Romanian or Russian will be an asset
Starting Date:	November 2019
Duration of Assignment:	64 working days till June 2020

I. Background

The dramatic decrease of specific technologies such as wind and solar power in past 8 years and similar plummeting in costs for storage technologies, EU started to rethink its energy and climate change goals by focusing more on decentralized energy systems, small scale local production and consumption, digitalization of energy services, decarbonized energy mix and citizenship empowerment with the benefits of the transition to a cleaner energy future. The EU document that encapsulates all these changes and will determine the EU energy strategic directions by 2030 is called “EU Clean Energy Package” and is expected to enter in force by 2020. Win-win situations could be identified for Moldova to profit from these changes.

The Republic of Moldova is poorly endowed with conventional energy resources, and highly dependent on imported energy. The electricity sector of Moldova is fully dependent on external energy sources. Domestic supply sources consist of several combined heat and power (CHP) plants covering up to 20% of domestic consumption. The rest of demand is met by electricity procured either by imports from the Cuciurgani-Moldavskaya GRES gas-fired power plant, owned by the Russian company Inter-RAO and located in Transnistria or from Ukrainian suppliers such as DTEK. Similarly, Moldova is still largely dependent on gas supplies from the Russian Federation. In 2016, out of 1.038 Bcm of contracted gas imports, over 99% were acquired from Russia’s Gazprom. Another 2 Bcm were delivered by Gazprom to Transnistria and mainly used for electricity generation. Only around 25% of primary energy consumption is supplied through indigenous resources, 98% of which is biomass, mostly used for heating purposes in the rural areas.

Renewable energy could be one solution to tackle the energy challenges of Moldova. In this regard, Moldova committed to reach a binding target of 17% of energy from renewable sources in gross final energy consumption by 2020. By 2018 this target has been already achieved. The main source of energy that allowed Moldova to achieve its commitments relates to biomass. A significant contribution in this regard was brought by the project

of UNDP “Energy and biomass” and financed by EU between the years of 2011 – 2018. This suggests that Moldova could start thinking, planning and committing to more ambitious goals by 2030.

For the period 2021 – 2030 the Energy Strategy of Moldova has three specific objectives:(i) to ensure an enhanced use of renewable sources; (ii) to improve energy efficiency; (iii) to introduce intelligent power networks. As the Strategy recognizes for the Republic of Moldova, the use of local renewable energy sources has first of all the goal to ensure the security of supplies. Other public social and economic benefits of the RES development, such as a lower impact on the environment, the creation of new industries and enterprises, positive structural consequences on regional economies and the creation of jobs, are good reasons to support RES in the country.

In 2018, Moldova started together with IRENA a Renewable Readiness Assessment of the Republic of Moldova. This exercise aims to identify the needed actions to overcome the barriers that impede the development of this sector in Moldova. Moldovan Government also is working actively to update the Energy Strategy 2030. This would be the momentum for Moldova to be bolder and pay more attention to distributed energy systems, business models focusing on energy communities at local level, having in this regard specific targets, policy and support mechanisms for this sub-sector.

In this respect the energy cooperatives could have a transformative impact on the whole Moldovan power sector. The main implications in case of an energy cooperative would be to create a source of local development, energy self-sufficiency, potentially smaller energy bills. The impact would be less energy imports, less debts and more local production, transparency and control over energy resources.

II. Scope and objective of the assignment

The overall scope of the assignment is to investigate the best practices of innovative business models focused on distributed energy systems in Czechia and West European countries and test the best ways to replicate them in Moldova.

The specific objective of the assignment is to investigate the energy policy, regulatory and energy market landscape in Moldova in order to pilot and harness the benefits of energy cooperatives in the country.

III. Approach and methodology

The international consultant could be supported by a national consultant that will assist him during field visits in Moldova, collection and analysis of information, interaction with national institutions and local communities, meetings with energy market participants and other donors active in the energy sector of Moldova. An estimated 3 to 4 visits during the assignment might be needed. During the assignment the following tasks will be conducted by the consultant.

(1) Conduct market, policy research and modelling containing the following activities:

- i. Model and estimate the annual energy production of an energy cooperative covering the needs of a local community (with population ranging from 500 to 2000 inhabitants).
- ii. Estimate the volume of energy needed so that a cooperative could cover entirely (100% self-sufficient) or partially (50% to 70%) the energy needs of its members.

- iii. Estimate the energy production costs of a cooperative in Moldova using costs benefit analysis, Levelized Cost of Electricity or other analytical tools indicating the costs recovery of investing in a renewable energy cooperative. The scenario could also consider storage option and non-storage option of the electricity produced.
 - iv. Model scenarios where excess energy could be produced by a cooperative and injected into the national electric system of Moldova or sold on the market.
 - v. Analyze 3-4 different models of energy cooperatives that could combine various energy technologies (e.g. biomass, biogas, wind, solar) and different legal statuses (limited trade companies, partnerships of civil law, public organizations) to understand which of these models would better fit to the needs and realities of local communities in Moldova.
- (2) Illustrate 3-4 examples through case studies of energy cooperatives from countries where this model proved successful by providing details on energy market design, policy support, energy prices, support schemes, internal organization and overall building blocks that make energy cooperatives viable. Countries could be Czech Republic (in case any models of energy cooperatives exist in this country) or Denmark, Germany, the Netherlands, Austria, Sweden where this model proved a positive track record.
- (3) Propose the minimum set of policy, legal, regulatory measures as well as market support mechanisms so that energy cooperatives have a minimum starting point in Moldova.
- (4) Based on the preliminary analysis of energy policies, market landscape and electricity (energy) system of Moldova propose a project concept (ideally a project document) aiming to pilot a few models of energy cooperatives in Moldova

IV. Expected deliverables

	Deliverables	Timing	Deadlines
1.	Market, policy research and modeling a detailed report or separate sub-studies covering the following: <ul style="list-style-type: none"> i. Model and estimate the annual energy production of an energy cooperative covering the needs of a local community (with population ranging from 500, 1500 to 2500 inhabitants). ii. Estimate the volume of energy needed so that a cooperative could cover entirely (100% self-sufficient) or partially (50% to 70%) the energy needs of its members. 	<p>28 days <i>(Nr of days could be adjusted subject to the time needed by consultant)</i></p> <p>6 days</p> <p>6 days</p>	<p>March 2020</p> <p>January 2020</p> <p>February 2020</p>

	<p>iii. Model scenarios where excess energy could be produced by a cooperative and injected into the national electric system of Moldova or sold on the market.</p> <p>iv. Estimate the energy production costs of a cooperative in Moldova using costs benefit analysis, Levelized Cost of Electricity or other analytical tools indicating the costs recovery of investing in a renewable energy cooperative. The scenario could also consider storage option and non-storage option of the electricity produced.</p> <p>v. Analyze 3-4 different models of energy cooperatives that could combine various energy technologies (e.g. biomass, biogas, wind, solar) and different legal statuses (limited trade companies, partnerships of civil law, public organizations) to understand which of these models would better fit to the needs and realities of local communities in Moldova</p>	<p>4 days</p> <p>6 days</p> <p>6 days</p>	<p>March 2020</p> <p>March 2020</p> <p>April 2020</p>
2.	<p>Illustrate 3-4 examples through case studies of energy cooperatives from countries where this model proved successful by providing details on energy market design, policy support, energy prices, support schemes, internal organization and overall building blocks that make energy cooperatives viable. Countries could be Czechia (in case any models of energy cooperatives exist in this country) or Denmark, Germany, the Netherlands, Austria, Sweden where this model proved a positive track record.</p>	<p>6 days</p>	<p>November-December 2019</p>
3.	<p>Draft a report on the minimum set of policy, legal, regulatory measures as well as market support mechanisms so that energy cooperatives have a minimum starting point in Moldova.</p>	<p>10 days</p>	<p>April-May 2020</p>
4.	<p>Propose a project concept (ideally a project document) aiming to pilot a few models of energy cooperatives in Moldova</p>	<p>20 days</p>	<p>May 2020</p>

Note: The dates of the missions will be proposed by Consultant as part of his technical offer and consulted with the Programme Specialist/Cluster Lead prior to contract signature.

All of the deliverables will be prepared in English. Working language will be English with Romanian and/or Russian interpretation.

I. QUALIFICATION CRITERIA

Academic qualifications:

- At least master's degree in power engineering, energy systems, energy economics, energy management or other related fields.

Experience:

- At least seven (7) years of professional experience in energy industry, consulting services, research, design of decentralised or distributed energy systems and/or other related fields;
- At list three (3) years of experience in the international state-of-the-art approaches and best practices in distributed energy systems, modelling, policy design.
- Previous working experience from the Czechia and /or EU in terms of a specific track record of cooperation with institutions and bodies responsible for public policies in the field of energy.
- Demonstrated experience and success in the engagement of and working with the private sector and local communities on tasks related to distributed energy systems.
- Good analytical and problem-solving skills and the related ability for adaptive management with prompt action on the conclusion and recommendations coming out from the assignment;
- Ability and demonstrated success to work in a team, to effectively organize it, and to motivate its members and other project counterparts to effectively work towards the project's objective and expected outcomes;
- Proven experience in cooperation with international organizations or other bodies responsible for formulating smart urban development, at least three (3) similar assignments; previous working experience with UNDP or other international agencies will be an asset;
- Experience with Eastern European countries will be an asset;
- Excellent communication, analytical, facilitation and presentation skills;
- Excellent computer literacy (Word, Excel, Internet, Power Point).

Language skills

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

II. 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.

III. APPLICATION PROCESS

Applicants shall submit the following four documents:

Required

- Offeror's Letter confirming Interest and Availability;

- Personal History Form (P11 form) or CV, including information about past experience in similar assignments and contact details for 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 3

Incomplete applications not 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- P11 form

Annex 3- Financial proposal template