



## Technical Note

## The potential role of renewable energy in Moldova

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## ABSTRACT

The European Union (EU) is developing an increasingly close relationship with Moldova, going beyond cooperation, to gradual economic integration and a deepening of political cooperation. This fact indicates that eventually the adoption of EU legislation in the energy sector is a necessity. Therefore, the provision of a clear picture of the country's renewable energy potential is considered essential, bearing in mind the new EU Renewable Energy Directive, which sets a mandatory target of 20% of renewable energy sources by 2020 for each member state. The aim of this paper is to discuss the perspective of renewable energy in Moldova taking into account the current energy framework and to analyze, whether it is suitable to adopt similar methodologies and policy frameworks applied in other EU countries.

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## 1. Introduction

Reducing the environmental impact of energy supply on the local (e.g., emissions of pollutants) and the global level (reduction of green house gases) has been a major incentive for fostering and implementing Renewable Energy Sources (RES) policies in the last two decades.

Considering Europe's growing dependence on foreign energy sources, the security of energy supply is another motivation for adopting and implementing RES strategies, which gains more and more attention. Social and economic benefits of RES like creating new industries with good export prospects, positive structural effects on regional economies or job creation are further areas of motivation to support RES [1–3]. The characteristics of RES lead to public benefits in all of these areas [3–6]. Additionally, the growing integration of Europe is influencing the importance and the future development of RES and at the same time RES are currently unevenly and insufficiently exploited in the European Union (EU) [7].

The Energy Community, which was established between the EU and a number of third countries in order to extend the EU internal energy market to South East Europe and beyond, through the signed Treaty [8], places an obligation on Contracting Parties to provide an implementation plan on existing renewable energy-related Directives (2001/77/EC and 2003/30/EC). Moreover, the new EU Renewable Energy Directive, which was officially published in the Official Journal in June 2009, sets a mandatory target of 20%

of RES by 2020, with pre-determined and individually tailored targets for each member state [9].

In the above framework, Moldova is willing to adopt an energy policy that will compromise to the EU targets of the new EU Renewable Energy Directive, in order to accelerate its course towards its integration into the Energy Community. Taking into consideration the abovementioned context, an impact assessment study has been conducted, which included among others the analysis of the existing frameworks for renewable energy and their current state of development, the analysis of potential of RES in Moldova, as well as of the present energy situation in the country and of the current energy policies, focusing mainly on the statute for RES development and aiming at specifying the most suitable steps for moving forward.

Bearing in mind that the EU has distributed the responsibilities for achieving the 20% target amongst its member states by taking into account economic indicators such as GDP per capita as well as renewable resource availability within each member state, member states could carry the burden of promoting RES according to their economic and resource capacity. Such an approach would also be very valuable for the candidate contracting parties of the Energy Community, as Moldova, since it will take into account varying degrees and levels of economic development as well as resource availability.

The main scope of this research is to investigate the status and RES potential in Moldova in order to identify the most promising RES options for implementation and integration in the country's energy mix, towards the adaptation of a related RES policy and the country's progressive disengagement from fossil fuels.

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Apart from the introduction, this paper is structured along four sections. Section 2 presents a description of the current energy policies in Moldova and Section 3 outlines the present energy conditions of the country. Section 4 provides a detailed analysis of the RES potential; Section 5 depicts what should be done so as to move forward, while Section 6 summarizes the main results drawn up from this paper.

## 2. Current energy policies

One of the most important energy policy documents is the long-term Energy Strategy of the country that indicates the priority directions of developing the energy sector and the settled objectives for a far horizon. Taking into consideration the long-term development, the energy sector will need a re-modeling, in accordance with the stipulations of the “Long-term Development Strategy – Moldova 21” [10].

The strategic aspect of the Republic of Moldova adherence to the European Union concerns the realization of the Art. 60 “Energy” of the Partnership and Cooperation Agreement between the European Community and the Republic of Moldova. The cooperation will take place on the basis of the market economy principles, of the European Chart for Energy principles and on the background of the progressive integration of the Europe energy markets. The necessity of promoting a unique policy in the environment and using the natural resources spheres, the need for implementing the ecological demand in the national economy renewal process, the political orientation to the European integration – all these conditioned the revision of the environment policy and the elaboration of a new conceptual document in this sector [11]. In this way, the Concept of the environment politics of the Republic of Moldova (approved by the Resolution of the Republic of Moldova Parliament nr. 605-XV, of the 5th of November 2001) had been elaborated to connect the major objectives of the ecological policies to the social-economical changes of the country, to the regional and world programs and tendencies in this sector, for preventing the degradation of the environment [10].

The Regulation of the National Commission on implementation of the UNFCCC provisions and Kyoto Protocol mechanisms in the Republic of Moldova (further – Commission) was elaborated on the basis of Parliament Decision of the Republic of Moldova nr. 404-XIII of 16th of March 1995, “To ratify the UNFCCC” and of the Law of the Republic of Moldova nr. 29-XV of 13th of February 2003, on the accession of the Republic of Moldova to Kyoto Protocol of UNFCCC. On the 22nd of May, 2003, the Moldovan government ratified the Kyoto Protocol and the Protocol has been entered into force since the 16th of February 2005 [12]. In accordance with the Governmental Decision of the Republic of Moldova № 1574 of 26th of December, 2003, the National Commission on implementation of the UNFCCC provisions and Kyoto Protocol mechanisms in the Republic of Moldova has been established. This National Commission is the Designated National Authority (DNA) of the Republic of Moldova, which guides the activities on implementation of UNFCCC and Kyoto Protocol provisions.

The Republic of Moldova ratified the Energy Charter Treaty (ECT) and the Protocol on Energy Efficiency and Related Environmental Aspects (PEEREA) in 1996. By ratifying PEEREA, countries commit themselves to formulate and implement policies for improving energy efficiency and reducing the negative environmental impacts of the energy cycle (Art. 5). The guiding principle of PEEREA is that contracting parties shall cooperate and, as appropriate, assist each other in developing and implementing energy efficiency policies, laws and regulations (Art. 3).

There are three major documents on renewable energy policy in the Republic of Moldova, i.e., the Law on Renewable Energy

Sources (Parliament Resolution No. 160 of 12 July 2007); the Methodology for the Determination, Approval and Application of Tariffs for the Electricity Generated from Renewable Electric Energy and Biofuel (ANRE’s Decision No. 321 from 22.01.2009, Official Monitor No. 45–46 of 27 February 2009), as well as the Regulation on the Guarantees for Origin of Electricity Generated from Renewable Electric Energy and Biofuel (ANRE’s Decision No. 330 from 03.04.2009, Official Monitor No. 99–100 of 5 June 2009) [13].

The Republic of Moldova has prepared a National Strategy for Sustainable Development to cover the time period until 2020, which was presented at the World Summit on Sustainable Development that took place in Johannesburg in September 2002 [14]. The Strategy has not been formally adopted, but will be incorporated in the Enhanced Growth – Poverty Reduction Strategy Paper that is currently under preparation.

The Strategy will consist of two parts with short-term (2006) and long-term goals (2020). For both the short-term and long-term goals, concrete action plans will be developed. The objectives and actions will also be presented with estimated costs and identification of financial sources.

A National Council for Sustainable Development was established to ensure the coordination of the implementation of the National Strategy for sustainable development, but it is not operational. A similar function has instead been established for the new Strategy for economic growth and poverty eradication.

The “National Strategy of the Republic of Moldova in the 21 century” reaffirms the commitment to sustainable development and represents the first complex and long-term programme for the social-economic development of the country based on new principles:

- Development of a market economy with a social focus, based on private and public property and engaged in free competition which implies the creation of a competitive economic system and adequate to the principles, standards, tools and institutions of developed countries.
- Creation of an open civil society based on democracy, decentralization of the public system and support to the civil society.
- Development focus on the improvement of the quality of life and investment in human capital.
- Promotion of a new security concept – economic, social, agricultural and environmental.

The strategy of the Sustainable Development of Energy Sector of the Republic of Moldova up to the year 2020 is based on the increase of Energy Efficiency and the implementation of RES. The main objectives of this strategy are the following:

- Restructure the power sector, complete the privatization of enterprises and create a competitive power market, aligned to the European standards and norms.
- Increase power efficiency through the promotion of a consistent policy of energy conservation, including the use of regenerating resources.
- Ensure power security in the country through meeting the power and power resources demands in the required quantity.

Implementation of these objectives is planned to be carried out via the following activities:

- Power efficiency of output, transport, distribution and power supply.
- Renovation and increase in the competitive electricity generation capacities, evidence of modern transport network, systems and equipment.

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