

The Energy Security of the Republic of Moldova Concerning the Policies Adopted by the European Union – A Multi-Faceted and Complex Topic

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Abstract. *The new geopolitical dynamic has brought a series of energy security transformations in the Central and Eastern European region. The Republic of Moldova, located at the confluence of the pro-European, western, and Eastern trends, has started a series of efforts, visible on the stage of international relations, to acquire as many degrees of freedom as possible in the energy sector, limiting the effects of Russian pressures and encouraging the adoption of democratic policies. The state is a candidate for accession to the European Union, in which sense the present work aims, on the one hand, to simulate the application of the conditions of European forums in the energy field on the Moldovan market, as well as to x-ray the energy policy at the local level. The applied methodology, mostly qualitative, was based on the analysis of some documents with a European normative character, simulating the application of their provisions in the case of the Republic of Moldova. Punctually, through quantitative methods, with the use of secondary data, certain limits were determined regarding the amounts of energy resources that the Republic of Moldova should fall within to comply with European legislation. The conclusions of the paper demonstrated the pro-Western conduct of the Republic of Moldova in the energy segment in the period 2022-2023 and the state's ability to synchronize its legislation with the European one.*

Keywords: Republic of Moldova, energy, natural gas, electricity, crude oil.

Introduction

Since the conflict in Ukraine (UA) started, the Republic of Moldova (RM) has adopted a pro-Western behavior, including in the energy field, accelerating the procedures for adopting legislation synchronous with those of the European Union (EU). Thus, the neighboring state of Romania (RO) has repeatedly declared its desire to have an energy market connected with those of the European states, liberalized, thus opting for the democratic values of the West, despite the Eastern influences in this state.

The energy field of the neighboring state has seen, starting in 2022, significant developments in terms of increasing the degree of interconnection with European states, especially with RO:

- March 2022, the synchronization of the energy system of RM with the Network of transport and system operators for electricity. (Ministry of Infrastructure and Regional Development of the RM, 2022).

- March 2023, the agreement of the Romanian authorities to operate on the market of energy products a stock market operator with Romanian capital, BRM East Energy SRL RM, owned by Bursa Română de Mărfuri Romanian Commodities Exchange SA Bucharest (Rusu, 2021).

- September 2023, Vestmoldtransgaz SRL RM (owned by SNTGN Transgaz SA Medias) becomes the sole operator of the natural gas transport system in RM (Loy, 2023).

Furthermore, as part of ongoing efforts to diversify the sources of natural gas imports, starting from the second half of 2023, RM has resorted to imports *via* the Southern Corridor, *via* Turkey, agreeing in this regard with the Turkish operator Botaş AŞ Turcia (BOTAŞ, 2023).

In terms of geopolitics, RM has received constant support from the EU regarding the economic sector, with European forums constantly affirming the importance of RM in the area and the willingness to provide the necessary resources to overcome the challenges generated by the events in the region (EU, 2023). Thus, in 2022, RM the EU candidate state, and later in 2023, the European Political Community reached an agreement for the expansion of the Union, RM being among the countries mentioned on the short list of states with potential accession (EU, 2023).

From an energy point of view, RM is a state dependent on imports, relying on the natural gas it can import through the Southern Corridor, through RO, or the UA with gas of eastern origin.

In recent years, the entire region has faced several challenges in the energy segment, from the impact on global supply chains caused by the Covid-19 Pandemic to the effects of the aggression of the Russian Federation (RU) in UA, causing an accelerated increase in the price of natural gas on European markets.

During all this time, the European community block has offered support to the RM by supplying natural gas, in the case of RO, and by providing financial support, in 2022, through a 300 million euro loan from the European Bank for Reconstruction and Development (BERD) (Bennett, 2022).

The complexity of the chosen subject denotes from both the internal approach from the point of view of the strategy of RM assumed by the state authorities, and the external approach in terms of the application of European community norms that are not yet subject to the Republic of Moldova.

Moreover, the intricacy of this work is also reflected by the current geopolitical context in which the Republic of Moldova finds itself at the confluence of two significant ideological currents: pro-European and Russophile. The actions of representatives of the state of RM have a highly volatile character, as strongly pro-Russian ties make their presence felt in the state's strategies regarding natural gas imports, often coming into conflict with those pro-European.

Literature review

The energy context of RM

Short history

Following the breakup of the Union of Soviet Socialist Republics, RM, as an independent state, took possession of the entire energy infrastructure on its territory, expressing its desire stated in its Declaration of independance to "establish political, economic, cultural relations and in other areas of interest common with European countries (...)".

Being a state without significant natural resources in the energy spectrum, RM remained strongly connected to the FR, which delivered significant quantities of natural gas to ensure consumption in RM through the Russian company Gazprom. The RU was thus able to capitalize

on its energy resources exported to RM both economically, trading its natural gas transiting the UA, and geopolitically, keeping the RM in its sphere of Russophile influence (Cebotari, 2016).

However, with the development of cross-border interconnection points with RO such as the Iasi-Ungheni gas pipeline with an annual export capacity of 1.88 billion cubic meters and the operationalization of the Isaccea 1-Orlovka 1 point with an annual export capacity of 1.75 cubic meters, the RM has had the chance to diversify its natural gas import sources from RO and through the Southern Corridor (Transgaz).

The challenges of RM regarding energy security

Despite the efforts to develop the energy infrastructure with RO, a series of challenges persist for the RM in the energy sector, especially in the context of the armed conflict in the UA.

Following the RU attacks on the UA energy system, the two countries operated from the point of view of electricity in an insular system, thus creating import needs to cover domestic consumption (Vatman, 2024). Moreover, against the background of the significant reduction of electricity production in the UA, congruent with the reduction of gas volumes delivered by the RU to RM, the neighboring state had an acute deficit of electricity, importing, in the form of emergency aid, from the RO.

The main geopolitical difficulty in the energy segment of RM remains the lack of electricity production capacities on the right bank of the Dniester, the country being dependent on the production of the Cuciurgan plant, located in the Transnistrian region, which remains under the influence of the RU (*European Parliament*, 2023).

Thus, in the energy equation of RM, both regarding electricity and natural gas, the state has a significant degree of energy dependence on neighboring countries, especially in the current geopolitical dynamics.

This paper proposes an analysis of the energy segment of RM through two distinct but complementary approaches, on the one hand, the analysis of the energy policies of RM in an attempt to demonstrate the strategic relevance of the state's decisions following its pro-Western aspirations, and on the other part addressing, from the perspective of a candidate country for the EU, the capabilities of RM to apply a series of normative acts from the European legislation in the field of reference.

I. Analysis of the energy policies of RM

Regarding the energy strategy of RM, the state focuses on measures to diversify import sources by developing its bilateral relations, especially with member states of EU. Being a country without significant natural resource production, it is unable to gain some autonomy in the energy sector, meaning that, on the one hand, it requests and receives aid from the EU, and on the other hand, it remains caught as a historical "client" of the RU regarding natural gas imports.

In the *Energy Strategy of the Republic of Moldova until 2030* adopted by Government Decision no. 102/ 2013, the neighboring state relies on the development of natural gas transport networks in the region, with an emphasis on the western side, as a solution for the eastern alternatives, thus the strategically important project targeted is the Southern Corridor, which will create new transport capacities to RM through RO. Moreover, through this strategy, the RM has a clear pro-European vision, including the objective of synchronizing the natural gas and electricity transport systems with the EU.

Regarding electricity, the consumption of RM can be largely ensured by the Ciucurgan Power Plant (MGRES) which usually uses natural gas of Russian origin to produce electricity. The

power plant is in the southeast of RM, in Transnistria, on the border with UA, and produces electricity both for Transnistrian consumption and for the left bank of the Dniester. This was the main energy weapon used by the RU, reducing the natural gas flows dedicated to the plant so that it could only produce for Transnistria, to create pressure on the authorities in Chisinau to follow a pro-Russian policy.

Following the start of the conflict in UA, both UA and RM operated for a short time in an island regime, exchanging electricity only bilaterally, but UA energy infrastructure was so damaged that it could no longer supply the neighboring state. Thus, the two states benefited from emergency aid from European states to cover their domestic consumption, which was made possible by pre-war efforts to synchronize electricity networks with those of the EU. Thus, in the first part of 2022, the national electricity system of RM was synchronized with the European one through ENTSO-E. According to the Chisinau government, the synchronization "will allow supporting Ukrenergo and Moldelectrica in maintaining the stability of the Ukrainian and Moldovan energy systems." (Ministry of Infrastructure and Regional Development of the RM, 2022)

Looking at natural gas, RM has around 15 interconnection points with UA from the system to which it imported most of the volumes for domestic consumption until the start of the war (The Government of the RM, 2023). Following the decrease in volumes from the RU to RM, it increased its imports from RO through the Iași-Ungheni PI, which has an export capacity from RO of approximately 1.8 billion cubic meters of natural gas annually. Recently, at the level of March 2023, the RM resumed gas imports from the RU at a level of 5.7 million cubic meters per day.

To counterbalance the pressure of the RU from the 2022-2023 cold season on RM, the EU has dedicated a framework program RePower Moldova - European Union Support for overcoming the energy crisis designed to financially and logistically support the state. Thus, RM received financial support at the level of 150 million euros for managing the energy crisis it is going through, and European officials stated that it will receive an additional 250 million euros (of which 100 million euros in the form of grants, 100 million euros in the form of loans and 50 million euros in budget support) to contribute to the energy security of the country (European Council, 2023).

Additionally, BERD offered RM the sum of 300 million euros in the form of a loan. The amount is dedicated to increasing the energy security of the country for the purchase of natural gas (Bnnett, 2022).

II. The impact that European legislation in the energy field would have on RM if it was a member state of the EU.

II.1. Voluntary reduction of natural gas demand

Based on the Regulation of the European Parliament and of the Council no. 1938 of October 25, 2017, regarding the measures to guarantee the supply of natural gas and repealing the regulation (EU) no. 994/2010, in the short term, mainly to ensure the volumes of natural gas needed for the 2022-2023 cold season, the Council of the EU adopted Regulation no. 1369 of August 5, 2022, on coordinated measures to reduce gas demand. The regulation proposes a voluntary reduction of natural gas consumption by 15% between August 1, 2022, and March 31, 2023, compared to the average consumption of the reference period of the last five consecutive years before the entry into force of the document. The normative act also provides for the situation in which there will be a need for a mandatory reduction of gas demand in the member states, in exceptional cases, when the member states "consider that there is a substantial risk of a serious shortage of gas supply or a

demand of gas exceptionally high (...) which would lead to a significant deterioration of the gas supply situation in the Union".

I.2. Plotting of natural gas storage objectives

Also, as a measure to increase resilience to the need for imports from RU, the EU adopted another normative act on the concertation of member countries' efforts regarding the realization of natural gas stocks in underground storage deposits. Regulation of the European Parliament no. 1938 of June 29, 2022, amending regulations (EU) no. 1938/2017 and (EC) no. 715/2009 regarding gas storage was adopted to avoid immediate disruptions in the supply of natural gas in the context of reduced flows of gas from EU to Europe via the routes through UA and by affecting the functionality of the Nord Stream 1 and 2 gas pipelines through Germany.

The main provision of the regulation consists of creating the goal of filling storage facilities (including LNG facilities) throughout the EU to 80% in 2022 and to 90% starting in 2023 by November 1, 2023. Compliance with the regulation does not entail optional valences, it provides for clear deadlines drawn through intermediate objectives drawn during the year between February and October of each year so that the final objective set at the beginning of November can be reached.

I.3. Limiting imports of oil and oil products from the RU

As a measure of the sanctions regime of the EU applied to RU with implications on the energy security of the entire community bloc, the Council of the European Union adopted Regulation (EU) No. 879 of June 3, 2022, amending Regulation (EU) No. 833/2014 regarding certain restrictive measures given RU actions to destabilize the situation in UA prohibiting imports from the RU in respect of crude oil or petroleum products defined as "Petroleum or bituminous mineral oils, other than crude oils; preparations not elsewhere specified or included, containing at least 70% by weight of oils from petroleum or bituminous minerals and for which these oils constitute the basic elements; waste oils".

The text of the regulation provides for two deadlines, December 5, 2022, for the cessation of crude oil imports and February 5, 2023, for petroleum products. However, the deadlines also suffer specific derogations regarding some states that, due to their geographical position, cannot give up Russian crude oil within the set time. An example of this is Bulgaria, which can continue importing Russian crude oil and petroleum products until December 31, 2024, with their transport by sea.

Methodology

I. Analysis of the energy policies of RM

While conducting the research for this paper, I used mainly qualitative methods, with the aim of a broad understanding of the state of energy security of RM, analyzing the possibility of the state complying with European norms in the reference field in the context of limiting dependence on imports of natural resources from FR.

The research used secondary data, such as studies on the actual state of the energy segment of the RM, the programmatic documents of the state that establish the directions to be followed in the medium term to strengthen the country's resilience concerning possible hostile actions of eastern origin and official publications of the institutions of the RM, of European forums, but also of credit institutions.

The limitation of the research consists of the possibility of the appearance of some subjective attitudes of the author regarding the interpretation of the study texts, as well as possible ideological and cultural interventions of the author. Moreover, being research of a different state than the one of origin of the author, the research can be flawed by the lack of identification of sources of studies as close as possible to the current reality in the state in question.

II. The impact that European legislation in the energy field would have on RM if it was a member state of the EU.

For the second part of the paper, the research approach was based on both a qualitative side regarding the texts of the European legislation in the field and a quantitative one, using secondary data provided by European statistical institutions (Eurostat and ENTSO-G) to simulate the impact that the application of European legislation would have had on the energy situation of RM.

II.1. Voluntary reduction of natural gas demand

At the time of the adoption of Regulation of the European Parliament and of the Council no. 1938 of October 25, 2017, regarding measures to guarantee the supply of natural gas and repealing regulation (EU) no. 994/2010, a calculation could not be made on the volumes of natural gas consumed, as the official data was not published by each country, instead, it could be estimated. According to data from Eurostat, the situation for RO, Bulgaria, and the countries with candidate country status (with comparative relevance to the situation in RM) to the EU was presented according to Table 1.

In the case of the RM, UA, and Georgia, domestic consumption averages were made for shorter periods, two and four reference periods, respectively, due to the lack of data from the accessed database, but, except for UA, the consumption average retains its relevance, not existing large variations between recorded reference periods.

According to data later published by EUROSTAT, the mentioned countries had the following consumption: EU – 247,273 billion cubic meters, BG – 1,688 billion cubic meters, RO – 7,438 billion cubic meters, RM – 524 billion cubic meters, Georgia – 2,434 billion cubic meters (Table 2).

The research was limited to UA, for which consumption data for the 2022-2023 cold season could not be obtained.

Thus, both at the EU level and at the level of most of the EU candidate countries, the gas consumption reduction targets have been reached, apart from Georgia.

The reduction can be due both to market conditions, with natural gas prices in the 2022-2023 cold season reaching 350 euros/MWh at TTF, and to the high temperatures recorded (Tradingeconomics).

II.2. Plotting of natural gas storage objectives

According to the data published by the Network of Natural Gas Transport and System Operators (ENTSO-G), in November 2023, most of the member countries of the Union met the storage objective, in the case of RO and Bulgaria, the warehouses were occupied in a percentage of over 90 %.

In this case, RM does not have underground natural gas storage capacities, however, it has carried out storage activities in the neighboring countries, RO and UA. Through the state company ENERGOCOM SA RM, the neighboring state purchased natural gas and stored it in neighboring countries.

In 2022, the same company was licensed in RO as a trader to be able to import volumes of natural gas into RO, later to store them, and be able to access them in the cold season (Econmedia, 2022).

In this case, the readiness of the UA to provide storage capacities for EU countries and beyond is noteworthy, since Kyiv decided from the beginning of the armed conflict to offer about 10 billion cubic meters of storage capacity in the warehouses in the west of the country, far from the front the fight (Simon, *Ukraine offers 10 bcm of gas storage to Europe for next winter* 2023).

However, the risk of unavailability of volumes stored on the territory of the UA persists, as the state's energy infrastructure has been systematically affected by the RU.

I.3. Limiting imports of oil and oil products from RU

RM, at the level of 2023, has no operational refineries on its territory. The country is dependent on imports of petroleum products (already refined), the main source of import being RO through two companies. According to the data published by the National Energy Regulatory Agency of RM, for the first months of 2023, the total volume of imported petroleum products was at a level of approximately 672 thousand tons, of which diesel approx. 491 thousand tons, gasoline approx. 137 thousand tons and liquefied gas approx. 44 thousand tons.

Regarding the country of origin of oil product imports, RM mainly relies on RO as a traditional supplier of these products. Thus, according to the same agency, in the first 9 months of 2023, 96.5% of the gasoline imported into RM originated in RO, while 3.5% came from Bulgaria.

Regarding diesel, RM imported 71.6% from RO, 8.5% from India, 11% from Turkey and from other countries such as Bulgaria, the United Arab Emirates, Israel, etc., in smaller percentages.

Regarding liquefied gas, RM imported 54.5% from RO, 7.5% from Algeria, 1.4% from France, and from other countries in smaller percentages (The National Agency for Energy Regulation of The Republic of Moldova, 2023).

The substantial quantities imported from RO are due to the oil products market of the two states, having joint economic entities that also own refining facilities in RO, such as ROMPETROL RAFINARE SA Năvodari or OMV PETROM SA București. At the same time, the trend of high percentage imports of petroleum products from RO to RM is also due to the proximity of the two states and the refining capacity of the RO state. The Moldovan state has a low dependence on oil products from the RU, so it could find medium-term solutions to meet the energy security policies of EU set by Regulation (EU) no. 879/2022.

Results and discussions

I. The energy strategy of RM until 2030 has kept its relevance since its adoption, having clear and pro-European objectives, but the level of infrastructure development and import possibilities from European states are reduced compared to the state's internal demand, resulting in a dependence in this sense by the energy resources delivered by the RU. The state benefits from ample aid from the EU and member states, but the destabilization of UA and the damage to its energy infrastructure were also felt in RM, which was the target of Russian pressure to depend directly or indirectly on its natural gas, both for domestic consumption and industrial, as well as to produce electricity.

II. Based on the state of the present energy infrastructure, RM can comply with the European normative framework in the reference field adopted in the context of sanctions for the FR. However, certain weak points remain in terms of the state's capabilities to manage at a geopolitical level the relations with the RU regarding natural gas imports, considering the dependence on

electricity from the Transnistrian area, but also in the short/medium term perspective in which the contract transit of Russian natural gas through the UA will expire at the end of 2024.

Figures and tables

Table 1. Calculation of the reduction in natural gas demand according to Regulation no. 1369/2022 for some EU member and non-member states for the 2022-2023 cold season, values expressed in billion cubic meters.

Cold season country	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	Media	Simulation of the natural gas consumption according to R. 1369/2022
EU	308.612,900	297.861,192	297.537,494	310.689,935	295.477,614	302.035,827	256.730,453
Romania	9.642,000	9.557,000	8.807,000	9.530,000	8.896,000	9.286,400	7.893,440
Bulgaria	2.288,000	2.231,000	2.049,248	2.385,604	2.342,382	2.259,247	1.920,360
RM	N	N	N	998,200	943,100	970,650	825,053
UA	N	N	N	21.483,000	14.699,700	18.091,350	15.377,648
Georgia	N	1.990,000	2.055,470	2.025,910	2.361,210	2.108,148	1.791,925

Source: Author's own research based on data published by Eurostat.

Table 2. Calculation of average consumption for some EU member states and non-member states for the cold season in the period 2018-2023

Cold season country	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	Actual average consumption
EU	297.855,192	250.692,483	311.217,565	295.119,34	247.273,4	280.431,5956
Bulgaria	2.231	1.744,248	2.385,604	2.342,382	1.688,355	2.078,3178
Romania	9.557	7.682	9.530	8.896	7.438	8.620,6
RM	N	N	998,2	943,1	524,8	579,54
UA	N	9.723	21.483	14.699,7	N	9181,14
Georgia	1.990	1.810,47	2.025,91	2.361,21	2.434,88	2.124,494

Conclusion

In conclusion, the economic security of RM in the energy sector is of regional importance in the context of the UA conflict. The RU has the necessary means to exert pressure on the EU bloc through RM, possibly causing interruptions in the supply of natural gas to the Transnistrian region or selling natural gas at prices that RM cannot support commercially.

The energy field of the neighboring state is on a pro-Western trend through the presence of several economic entities from the EU on its territory, which will increase economically and logistically the resilience of RM concerning the pressures of the last period.

The energy field of RM often has ramifications for the entire Eastern European region, since the Russian Federation can use the solidarity mechanisms of the EU to create additional pressure on the regional energy equation. Therefore, the energy field of the neighboring state will remain a difficult problem to solve, just like a Gordian Knot, but without a figure such as Alexander the Great to find a way around it.

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