ISSN 2345-1424 http://jrtmed.uccm.md E-ISSN 2345-1483

Journal of Research on Trade, Management and Economic Development
Category B
VOLUME 9, ISSUE 1(17)/2022

THE NEED FOR INTEGRATION OF THE ENERGY COMPLEX OF THE REPUBLIC OF MOLDOVA INTO THE EUROPEAN ENERGY SYSTEM IN THE CONTEXT OF ENERGY SECURITY

Maxim SANDU, PhD student
Free International University of Moldova
E-mail: sandumax@gmail.com

Universal Decimal Classification: 339.92:620.9(478)
JEL Classification: F02, F15, F52

Abstract

This study is an attempt to reflect the current situation in the field of energy security in the Republic of Moldova in the context of international economic relations. The presented article demonstrates the results of a study of scientific, open sources of information, as well as the current experience of European countries in the field of energy, ways of developing alternative energy sources.

Based on a review of previous studies in the field of energy and data on the current state of the energy complex of the Republic of Moldova, the existing problems of the strategic vision of the situation in the field of energy security and sustainable development of the energy complex of the Republic of Moldova were identified.

The author reflects the economic, environmental, infrastructural aspects of energy security, through the prism of which the relevance of this research topic is demonstrated. Based on the presented approaches, the understanding of the essence of the concept of energy security is modified and supplemented. Therefore, the author made an attempt to formulate a comprehensive definition that is maximally adapted to modern realities.

Some possible solutions are proposed, formalized in the form of strategic directions and appropriate steps for the development of energy cooperation of the Republic of Moldova in the context of energy security. These strategic steps can form the basis of future research and development.

Keywords*: energy security, international relations, integration, energy complex, European Union*

1. Introduction

For the correct and effective choice of specific ways of rapprochement between the Republic of Moldova and the European Union in the field of integration of the fuel and energy complex into the European energy system, a clear understanding of the currently emerging context of international relations in the region and the world as a whole is necessary. The formation of strategic initiatives for the energy integration of Moldova into the European Union is greatly influenced by the current geopolitical realities. This factor in the near future, definitely, will have a strong impact on the entire system of international relations, will largely lead to their reformatting and will affect the economic indicators of the European Union, including in the field of energy safety.

The issue of energy security is of a particular topicality, because the reliable and secure supply of energy produced in environmentally acceptable ways is the one that creates the premises for the harmonious development of modern economies. Thus, the author addresses the subjects such as: the evolution of the concept of energy security; the issues of energy

security of the Republic of Moldova; the current situation in the European Union in the field of energy supply.

The aim of this research is to identify the opportunities for the integration of the Moldavian energy sector into the European energy system, taking into account the need to ensure the energy security.

2. The extent of the current study of the problem, objective of the study

In recent years, the term "energy security" has taken its place in various economic and public debates as a weighty factor and a universal argument for bringing countries closer together in this context. Despite the presence of a significant number of academic and scientific works of domestic and foreign authors, there is still no single definition of energy security.

The first mention of the term occurred in 1947 in the United States, when a law was passed regulating the state policy of national security. This concept became an independent concept after the 1973 oil crisis, which led to the creation of the International Energy Agency, which provided the following formulation of energy security - confidence that energy will be available in the required quantity and quality under certain economic conditions [8].

Since then, this concept has evolved and acquired a new meaning. In the context of new trends, such as environmental and technological safety, the concept under study is no longer limited to the borders of a single state and the energy supply of the population and a certain national economy, but is expanded and supplemented as a result of a global rethinking.

Judging by the research of other scientists, energy security in the current context is not just the security of supply, but something that includes aspects of security in a broader sense - economic, political, environmental, infrastructural, and even in terms of terrorist activities. threats., taking into account the current challenges of sustainable development and the challenges associated with climate change [2, p. 1094].

Provision of a high level of energy security is an important link for the economic security of a country. Focusing on the economic aspect of energy security, we should talk about the state of society and the economy that allows, on the basis of the efficient use of fuel and energy potential, the maintenance of the level of energy consumption necessary for the socioeconomic development of the country, of an optimal level of export to the world energy markets in terms of trade criteria, as well as of a level sufficient for the interests of the country. After all, the energy sector has a fairly significant share in the overall assurance of economic security, forming the necessary fuel reserves for the entire state economy.

On the other hand, there is a correlation between the economic conditions of a country and the quantity and quality of energy. Thus, energy security can be defined as the confidence that energy will be available in sufficient quantity and quality, depending on needs, under certain economic conditions [8]. Thus, the energy security of a region must be understood as a characteristic of the energy and fuel complex of a state, which determines the capacity of this complex, on the basis of efficient use of internal and external resources, to ensure a reliable energy supply of economic entities and of population, without compromising the economic security of the state or region.

Energy security can be ensured only if environmental factors are taken into account. The fuel and energy complex represents one of the largest sources with negative impact on the environment. It is one of the objects of high risk for society and for environment. Energy security is an integral element of national security, as it is closely linked not only to the economic prosperity, but also to the concept of sustainable environmental development. Therefore, revealing the essence of the ecological aspect of energy security, it is advisable to mention that it is related to the impact of the fuel and energy complex on the environment, the emissions of fuel combustion products into the atmosphere and, consequently, the occurrence of the problems such as the intensification of the greenhouse effect and climate changes, acid precipitations, formation of smog, etc. The tightening of environmental protection measures has already become an important factor for energy security itself, which in its turn stimulates the development of alternative energy and hydroelectric energy, energy savings and efficient technologies from energetic point of view.

Climate aspects of energy development are actively discussed in the European Union countries. The so-called climate strategies for the energy sector do not refer to the limitation of the economic growth of countries, but to the maintenance of the ecological balance and taking into account of all requirements necessary for environmental security.

The infrastructural aspect of energy security is characterized by a wide range of necessary facilities: buildings, structures and other complexes that are designed to extract, process, transport, receive energy in its various forms.

Some authors explain the definition of energy security from the point of view of ensuring the protection of the population and the country from threats to energy availability, which are possible due to adverse natural, artificial, domestic and foreign political, socio-economic and other environmental factors [13, p. 7].

The aim of the study is to develop a strategic approach aimed at ensuring the energy security of the Republic of Moldova on the basis of its integration into the EU energy complex. Achieving this goal is planned in three stages, each of which is formalized within a certain timeframe and specific areas of activity. The sequence of stages implementation and the systemic nature of the overall strategy can guarantee the successful integration of the Republic of Moldova into the energy system of the European Union, as well as contribute to the development of the country's international cooperation to a new qualitative level.

3. Methods and materials applied

For the analysis of the situation in the field of energy in the Republic of Moldova, scientific and publicly available sources of information on international trends in the field of energy were used. The qualitative method of expert assessment of the situation in the field of energy in the Republic of Moldova was applied. The author developed the scenario of the in-depth interview, in the course of which the expert opinions of the representatives of the scientific community, specialized specialists in the field of energy and energy security in the Republic of Moldova were collected. The results of the study were recorded on the voice recorder or sent by the respondents by e-mail. The obtained expert opinions made it possible to formulate the directions for the strategic development of the process of the integration of the fuel and

energy complex of the Republic of Moldova into the European energy system.

The originality of the research method applied for the achievement of the objective of this article consists in the following: at present, there is little or no published scientific paper on some aspects related to energy security, because the changes are too dynamic, significant changes taking place almost daily. As a result, interviewing of experts made it possible the faster obtainment of answers to questions that is a clear advantage in the current context of instability.

4. Results obtained and discussions

Today, energy plays a significant role in raising living standards and expanding development opportunities in both highly developed and developing countries of the world. Energy is now regarded as the main resource that ensures the life of civilization on the planet. The world's energy needs are covered by the extraction of oil, natural gas and coal. However, these valuable resources are unevenly present throughout the world, which leads to an increase in the speed and volume of extraction, processing, and improvement of the processes involved. In this case, the process of exhaustion is inevitable and occurs very quickly. The rapid depletion of non-renewable resources is becoming a global energy problem. Therefore, an integrated approach is needed, taking into account a long-term vision for solving this problem. Ensuring an efficient, environmentally friendly, but reliable energy supply at prices that reflect the fundamental principles of a market economy is of great interest and at the same time a challenge for all countries of the world and the world community.

The different points of view regarding the understanding of the essence of energy safety and their evolution demonstrate that this is not a static process and its relevance is proved by the experience of many countries. Of particular interest in this sense is the experience of the European Union, which has recently encountered significant energy difficulties. In addition, many highly developed member countries of the European Union were constantly in search of alternative energy sources.

Today, one common objective has been set in Europe – to achieve the climatic neutrality by the middle of the century, and in the new realities another one has appeared – not to be dependent on the supplies from the countries that extract and supply the energy resources, which can, at some point, use this tool for the political blackmail. And in this regard, the decarbonization path followed by the European Union will lead to climate and energy safety at the same time. At the same time, it must be taken into account that European countries practically do not produce their own fuel and are penetrated by Russian oil and gas pipelines, which is clearly demonstrated in the figure 1.

Accordingly, the rejection of Russian oil can be relatively painless for Europe, due to the fact that some countries of the European Union (Lithuania, Poland, Finland) almost completely depend on it. In this case, the global strategic reserves and Middle Eastern suppliers that can increase production can help. With the supply of Russian gas, the situation becomes more complicated, because, as you know, European countries are more dependent on it than on oil. In the last thirty years, the European Union has moved to import 40% more gas, in particular Russian. For example, the Republic of Moldova, Finland, Estonia, Bulgaria consume only it.

Natural gas, unlike oil, is not sold on the world market and is almost never delivered by tankers, for this reason the change of the gas supplier in the immediate future is an extremely difficult objective. At the moment, neither Europe nor other countries are ready to increase natural gas production, and its strategic reserves practically do not exist.

Figure 1. Scheme of existing oil and gas pipelines from Russia on the territory of Europe
Source: [3]

The response measures to the indicated problems become the agreements of European leaders to speed up the renunciation of Russian coal, oil and gas as much as possible. It is also planned to fill gas storage facilities, temporarily limit the price of fuel and seek to diversify the supply of energy, that is, not only to replace Russian pipeline gas with Norwegian, Azerbaijani and Algerian ones, but also count on the possibility of switching to liquefied natural gas from the USA, Qatar or Japan. Thus, Austria no longer purchases oil from Russia, and the Netherlands plans to stop importing Russian energy resources by the end of the current 2022.

However, it should be understood that the real goal of the current strategy is not exclusively a direct rejection of fossil fuels from Russia, but the rejection of it in principle. Dependence on fossil fuels can lead to dependency on the supplying country. In order to reject of oil, gas and coal in its energy systems in the visible future, the European Union is planning their modernization oriented to the introduction of biogas and “green” hydrogen, to make a decisive and dynamic transition to eco-transport, to instal sufficient number of solar panels and wind turbines, to improve accordingly the insulation of buildings and heat them with the help of the heat pumps, to apply the carbon capture technologies and more. Some European countries, such as Greece, the United Kingdom, have already expanded the use of renewable resources, other countries, such as Belgium, Germany, postponed the closure of the projects

within nuclear energy. Some countries (Italy, Czech Republic) even decide on a temporary return to the use of coal.

For the European Union, the coming years may be difficult, but in the long term, today's crisis may, paradoxical as it may sound, affect positively the state of the climate and contribute to the strengthening of the energy safety in the region [5]. The scientists and practitioners in the field of energy have long attracted the attention of politicians and economists in the field of international relations to the fact that excessive enthusiasm for fossil fuels is not only the cause of climate change, but also the root of geopolitical conflicts, since it makes democratic states dependent on unpredictable and authoritarian regimes.

Speaking about the Republic of Moldova in this context, it can be noted that the country is one of nine countries in the world that, according to the authoritative assessment of "Maplecroft", are in the group of "high risk" within the terms of energy security [10]. The country faces a rather difficult energy situation of all time among all states of the Eastern Partnership of the European Union. This situation is exacerbated by the deficit of the local resources, as well as the lack of direct access to sea.

Analysing the current state of the energy sector of the Republic of Moldova it is rational to refer to energy statistics, which are elaborated and disseminated by the National Bureau of Statistics. The evolution of exports and imports in the period 2015-2020 is presented in the table 1.

Table 1. Evolution of export and import of energy resources, Republic of Moldova, in thousands of tons of oil equivalent, 2015-2020

	2015	**2016**	**2017**	**2018**	**2019**	**2020**
Import	1766	1818	2012	2109	2031	1935
Export	16	15	34	27	9	21

Source: [1]

These indicators demonstrate an overwhelming preponderance of energy imports over exports, the situation of the energy structure of the energy complex of the country and its passive position, as well as its weak modernization. Constant preponderance of imports over exports. Slight modifications of the indicators suggest that imports remain consistently predominant.

More up-to-date data provided by the National Bank of Moldova demonstrate that in 2021, compared to 2020, energy and electricity imports increased by 1,9 times in value terms, up to 1 billion 037,37 million dollars [11]. At the same time, the imports of energy and electricity of the Republic of Moldova, in value terms, amounted to 192,03 million dollars in the first quarter of 2021, 188,73 million dollars in the second quarter of 2021, 248,12 million dollars in the third quarter of 2021 and 408,49 million dollars in the fourth quarter of 2021 (in the same periods of the previous year – 203,85 million dollars, 94,33 million dollars, 107,54 million dollars and 153,87 million dollars). Thus, in the quarter IV of 2021, compared to the same period in 2020, energy and electricity imports in the Republic of Moldova increased by 2,7 times in value terms, mainly because of the prices advance for natural gas, diesel and gasoline. In particular, in the quarter IV of 2021, compared to the same period in 2020, natural gas imports in the country increased by 4,8 times in value terms – from 45,81 million

dollars to 217,79 million dollars, of diesel – by 78% - from 68,4 million dollars to 121,78 million dollars, of gasoline – by 64% - from 20,29 million dollars to 33,28 million dollars and of coal – by 56,9% - from 3,62 million dollars to 5,68 million dollars.

Gross and final domestic energy consumption in the Republic of Moldova is presented in the form of a diagram in the figure 2.

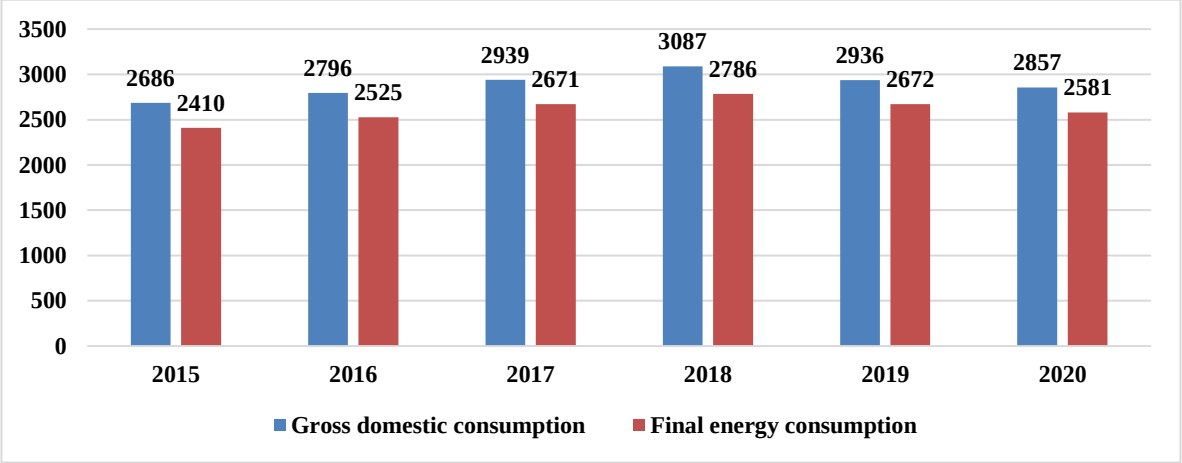

Figure 2. National consumption of energy resources of the Republic of Moldova, in thousands of tons of oil equivalent, 2015-2020

Source: [1]

The diagram demonstrates an insignificant dynamic over six years in terms of energy consumption. This indicates, on the one hand, the lack of strong demand growth (weak growth trend) and, on the other hand, the lack of energy efficiency (weak downward trend). The final energy consumption by types of activity is presented in the figure 3.

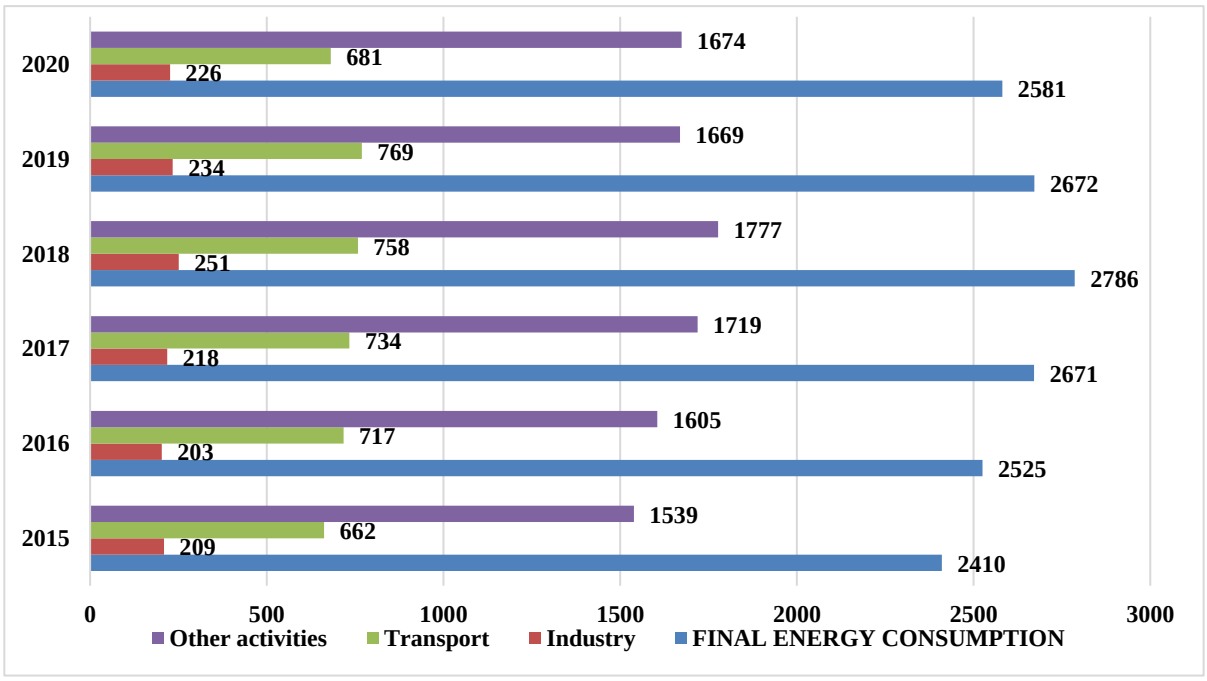

Figure 3. Structure of energy consumption in the Republic of Moldova by types of activity, 2015-2020

Source: [1]

From the diagram above results that other types of activity, and namely the residential sector, prevail at present in significant manner in the overall balance, indicating low energy efficiency, which is primarily because of the outdated infrastructure of the residential sector, both concerning the building itself (high volume of residential sector of the 60s and 70s), as well as the low level of modernization of energy transport routes. Indicators of final energy consumption for transports demonstrate a clear predominance of road transport (approximately 90% in the last 6 years). All other types of transport (air, rail, pipeline and others) also account for about 10% in the last six years.

The problems in the field of energy safety in the Republic of Moldova include the following [14, p. 150], [12, p. 7]:

- insufficiency or shortage of electricity;
- with the possibility of the development of the "green energy", complete absence of own energy resources;
- significantly high wear of power engineering equipment;
- insufficiency of investments for the formation of the basic needs of energy systems and infrastructural opportunities;
- increase in energy dependence;
- low energy efficiency.

These problems appeared as a result of a wide range of factors and unresolved situations, including an underdeveloped energy infrastructure, frozen conflict and significant tensions in terms of regional gas transit [7]. Some authors agree that the high energy dependence of the Republic of Moldova on Russia may reinforce negative trends in the field of energy safety. And also, the fact that there is no progress in the given issue, despite the recent attempts of the Republic of Moldova to strengthen ties with the European Union [4], [9].

The author conducted an in-depth interview with experts (head of technical direction business center; UTM university lecturer, scientific researcher of the Institute of Cultural Heritage of the AS of the Republic of Moldova). The author interviewed the experts in the fields close or directly related to the energy complex of the Republic of Moldova. The obtained results, for the most part, are presented by direct quotation, and only a few were reduced with the maintenance of the general meaning of the idea of expert. The answers of the experts are presented in the table 2.

Table 2. The results of the expert assessment of the state and development prospects of the energy safety of the Republic of Moldova

Question	Expert commentary
In 2013, the energy strategy of the Republic of Moldova until 2030 was developed [5]. What are the "weak points" and modalities of improvement of the given strategy?	– The strategy needs to be adjusted in the light of the changed geopolitical events and, as a result, increase in the energy resources prices; – The strategy does not provide concrete ways for the energy development of the Republic of Moldova; – There is no consideration of risks, emergency situations that are possible in the energy field; – Consideration of the exclusively European vector.
What are the main problems of the energy	Lack of diversification of supplies/extremely high dependence on a small number of suppliers (often dependent on geopolitical decisions);

safety of the Republic of Moldova that are relevant today?	Focus on a limited set of types of electricity generation (thermal power plants); Overregulation of the market/close to monopoly or monopoly position of suppliers and importers/difficulties for new players to enter the market; Low energy efficiency of productions/households; Slow transition to alternative types of fuel (electric vehicles/biofuel/heat pumps for heating, etc.); Deficit of investment resources; Financial instability in provision of the functioning of the energy complex; Inefficient use of fuel and material resources; High levels of monopoly of producers; Deficit of energy capacity; Insufficient transmission capacity of networks; Foreign political and foreign economic threats; Management imperfection.
Indicate the main strategic approaches for settlement of these problems at the current stage and approaches to ensure energy security in the future for the Republic of Moldova?	Connection to the electric networks of the EU directly through the Moldavian-Romanian border; Bringing gas pipelines from Romania for complete alternative coverage of the country; Liberalization of the energy supply market and maximum simplification of the entry of new players to the market; Coordination of business and scientific community in the settlement of the energy issues; Improvement of the efficiency of the use of own energy sources; Modernization of the existing energy potential for energy saving and involvement of renewable energy sources in the energy balance.
Is ensuring the energy safety of the Republic of Moldova effective in the context of the integration into the Eurasian energy system? Are there prerequisites for this process? What effects can be expected?	The possibility of the use of the experience of various countries, not only of the European vector. Energy safety involves primarily the risk management/risk limitation. And one of the key mechanisms of the minimization of risks is the availability of reserve sources. Until recently, the Republic of Moldova fully relied on the historically established mechanisms for energy delivery – integration with the Ukrainian-Russian gas transportation system, integration with the Ukrainian power grids. High risk of the maintenance of the status quo in the supplies against the background of the military conflict in Ukraine. Positive assessment of the fuels and lubricants market – the supplies are diversified. Disadvantages: over-regulation, limited competition and high prices. Regulation of regimes and provision of parallel operation with the energy systems of Ukraine, the CIS and the EU will contribute to the status of energy security.
What are the main prospects and directions for the development of the energy complex in the Republic of Moldova?	Integration of Moldova with the European energy supply systems and synchronization of Moldova/Ukraine with the European power grids (construction of power transmission line to Romania/continuation of the connection of the gas transmission system of Moldova to the Romanian one). Balancing between eastern (lower prices) and western (backup supply option) suppliers. Slow development of wind and solar energy generators. Market liberalization is necessary for the development of renewable power sources. There is a need for donor-funded projects to develop/subsidize alternative energy sources. Prospects: search for mineral deposits in the Republic of Moldova; non-traditional energy sources (biogas, solar energy, etc.).

Source: developed by the author

Summing up, it can be noted that the main yet unresolved problem of the predominant number of the post-Soviet countries, which include the Republic of Moldova, is considered the fact that they are forced to develop and implement their own energy strategies under the conditions of small market volumes, limited financing from international investors in the creation of a better energy and transport infrastructure, as well as under the conditions of

complex geographical aspects that sometimes does not allow the search for the alternative supply routes.

In this regard, the Republic of Moldova may soon face serious challenges for its energy safety and in view of the existence of certain problems in the energy sector, the author has developed the stages of integration of the fuel and energy complex of the country into the energy system of the European Union, which are presented in the table 3.

Table 3. Stages of integration of the fuel and energy complex of the Republic of Moldova into the energy system of the European Union

Name of stage	Strategic directions	Period of implementation
The 1st stage: maintenance of stable status of transit country/consumer of energy resources	– Creation of prerequisites and gradual implementation of legislative and economic integration mechanisms on the basis of the documents of the European Union; – Diversification of energy sources; – Increase in the volume of renewable energy sources; – Start of infrastructural restructuring.	2023-2024
The 2nd stage: infrastructural modernization of generating and transport capacities	– Formation of the network of transportation of traditional energy carriers integrated with the European Union; – Multiple reduction of dependence on Russian supplies of energy carriers and fuel; – Increase in the share of renewable energy sources in the structure of the generating capacities of the country; – Gradual introduction of European Union standards in the field of energy.	2025-2026
The 3rd stage: The entry of the Republic of Moldova into the energy complex of the European Union	– Final refusal of the supplies of Russian energy carriers; – Full integration of the national energy infrastructure with the network of the European Union; – Complete transition to the application of energy standards and requirements of the EU; – Achievement of the basic target structural indicators in the energy sector of the economy of the country.	2027-2028

Source: developed by the author

The successive stages presented in the table will become the strategic milestones in the development of the energy complex of the Republic of Moldova. At the first stage of the maintenance of the stable status of the transit country/consumer of energy resources, the following steps are supposed to be implemented:

- Conduct of comparative technical-economical analysis and monitoring of legislative framework in the field of energy in the European Union and the Republic of Moldova;
- Elaboration of the program of the diversification of the sources of energy supplies;
- Monitoring of current state and achievement of target indicators of the development

of renewable energy sources;

- Increase of the existing infrastructural capacities on the basis of the accepted design models.

These steps are basic, providing the foundation for the construction of a more advanced infrastructure for full entry into the energy complex of the European Union.

The second stage concerns the infrastructural modernization, on the way to which the following steps will have to be taken:

- Transition to the common-European model of standardization of legislation in the field of energy security;
- Completion of construction of new transport corridors of traditional energy carriers and technical reequipment of the existing ones;
- Formation of the structure of the capacities of renewable energy sources in the energy balance of the country.

This stage is necessary to ensure the prerequisites for a stable transition to "green" energy. This approach is fully consistent with the stated goals of the EU and will lead to the future energy security of Moldova.

The third stage is the entry of the Republic of Moldova into the energy complex of the European Union. The final stage of the integration strategy involves the implementation of the following main steps by the end of 2028:

- Full transition to the supply of the traditional energy sources from the European Union;
- Final integration of the energy infrastructure of the Republic of Moldova into a single network with the European Union;
- Transition to stable maintenance of the level of sustainable development and energy security of the country.

The main content of the 3rd stage consists in the achievement of the goal of true energy security of the Republic of Moldova.

The future energy security of the Republic of Moldova is impossible without the comprehensive integration of the fuel and energy complex of the country into the energy complex of the European Union. Strategic cooperation in this area is undoubtedly the most important factor on the way of rapprochement of the Republic of Moldova with the European Union and will accelerate its entry into the European family of equal partners.

5. Conclusions

The current state of the fuel and energy complex of the Republic of Moldova clearly demonstrates the need for its deep modernization. The main problems for the energy security of the country are the shortage of electricity, the lack of own energy resources in the presence of the potential of "green energy", a high degree of depreciation of energy equipment, lack of investment for development, growing energy dependence and low energy efficiency.

It should be recognized that without reaching a certain modern level of development of the fuel and energy complex in the country, its integration into the European energy system

seems unlikely. The solution of these problems is becoming more urgent in the light of the military-political events taking place in Europe. The reaction to these changes was the formulation of the application of the Republic of Moldova for accession to the European Union of March 03rd, 2022. Obviously, these events are only the first steps on the way of the obtainment by the Republic of Moldova of the status of the candidate country for membership in the European Union, however, it can be said with confidence that the process of the European integration is reaching a new qualitative level. It should be understood that the requirements for a candidate country for membership in the European Union affect many aspects of a political, social and economic nature, among which the state and development potential of the energy sector of the economy is extremely important. To make the integration process systemic, a certain set of measures, plans, or, in other words, a strategy for the integration of the fuel and energy complex of the Republic of Moldova into the European energy system is required.

The strategic approach involves the passing of three successive stages: maintenance of a stable status as the transit/energy consuming country; modernization of the infrastructure of generation and transmission capacities; integration of the Republic of Moldova in the energy complex of the European Union. The set of measures may vary depending on the current events, but should include: restructuring and legislative preparation; a number of modifications of infrastructure; increase of the share of renewable energy in the structure of the production capacity of the country; transition to the application of the EU standards and requirements in terms of energy.

REFERENCES

1. Balanţa energetică a Republicii Moldova, culegere stasistică. [online] [cited 09.04.2022]. Available: https://statistica.gov.md/pageview.php?l=ru&idc=263&id=2197.
2. BOHI, D. R., TOMAN, M. A. Energy security: externalities and policies. In: Journal Energy Policy. 1993, vol. 21, no. 11, pp. 1093-1109. ISSN 0301-4215.
3. CALUS, K., DELCOUR, L., GAZIZULLIN, I. Interdependencies of Eastern Partnership Countries with the EU and Russia: Three Case Studies. [online] [cited 09.04.2022]. Available: http://eu-strat.eu.
4. Energy Consumption in Romania. WorldData Info website. [online] [cited 10.03.2022]. Available: https://www.worlddata.info/europe/romania/energy-consumption.php.
5. European Comission website. [online] [cited 02.04.2022]. Available: https://ec.europa.eu/.
6. Hotărîre cu privire la Strategia energetică a Republicii Moldova pînă în anul 2030, Nr. 102 din 05.02.2013. In: Monitorul Oficial al Republicii Moldova, 2013, nr. 27-30. [online] [cited 09.04.2022]. Available: http://lex.justice.md/viewdoc.php?action=view&view=doc&id=346670&lang=1.
7. Hotărîre cu privire la Programul naţional pentru eficienţă energetică 2011-2020, Nr. 833 din 10.11.2011. In: Monitorul Oficial al Republicii Moldova, 2011, nr. 197-202. [online] [cited 15.04.2022]. Available: http://lex.justice.md/viewdoc.php?action=view&view=doc&id=340940&lang=1.
8. International Energy Agency (IEA) website. [online] [cited 10.03.2022]. Available: https://www.iea.org/.
9. Legea cu privire la energetică nr. 174 din 21.09.2017. In: Monitorul Oficial al Republicii Moldova, 2017, nr. 364-370. [online] [cited 09.04.2022]. Available: https://www.legis.md/cautare/getResults?doc_id=110368&lang=ro.
10. Middle East OPEC Countries Rated “High Risk”. Maplecroft. [online] [cited 09.04.2022]. Available: https://www.maplecroft.com.
11. Monitorul Fiscal al Republicii Moldova website. [online] [cited 02.05.2022]. Available: https://monitorul.fisc.md/.
12. БЫКОВА, Е. В. Вычислительный комплекс и моделирование угроз энергетической безопасности Молдовы при отключении межсистемных связей. In: Problemele Energeticii Regionale. 2010, no. 3(14), pp. 1-9. ISSN 1857-0070.
13. ДУКА, Г.; ПОСТОЛАТИЙ, В. М.; БЫКОВА, Е. В. Аспекты проблемы энергетической безопасности Республики Молдова. In: Problemele Energeticii Regionale. 2005, no. 1, pp. 1-15. ISSN 1857-0070.

14. ОФИЦЕРОВ-БЕЛЬСКИЙ, Д. Проблемы энергетической безопасности Республики Молдова. In: Россия и новые государства Евразии. 2020, no. I (XLVI), pp. 146-156. DOI: 10.20542/2073-4786-2020-1-146-156.

Rezumat

Această cercetare este o încercare de a reflecta situația actuală a securității energetice a Republicii Moldova în contextul relațiilor economice internaționale. În articolul prezentat sunt abordate rezultatele cercetării surselor de informație științifice deschise, precum și experiența actuală a țărilor europene în domeniul energiei, modalitățile de dezvoltare a surselor alternative de energie. În baza analizei studiilor anterioare din domeniul sectorului energetic și a datelor privind starea actuală a acestuia în Republica Moldova, au fost identificate problemele existente în viziunea strategică a situației securității energetice și a dezvoltării durabile a sectorului energetic din Moldova.

Autorul a reflectat aspectele economice, de mediu și infrastructurale ale securității energetice, prin prisma cărora este demonstrată actualitatea acestei teme de cercetare. Pe baza abordărilor prezentate, este modificată și completată înțelegerea esenței securității energetice. Din acest motiv, autorul a încercat să formuleze o definiție cuprinzătoare, adaptată cât mai mult posibil la realitățile actuale.

Sunt propuse câteva soluții posibile, identificate ca direcții strategice și pași corespunzători pentru dezvoltarea cooperării energetice a Republicii Moldova în contextul securității energetice. Acești pași strategici pot constitui baza pentru viitoarele cercetări și elaborări.

***Cuvinte-cheie**: securitate energetică, relații internaționale, integrare, complex energetic, Uniunea Europeană*

Аннотация

Данное исследование является попыткой отразить текущую ситуацию в области энергетической безопасности Республики Молдова в контексте международных экономических отношений. В представленной статье демонстрируются результаты исследования научных, открытых источников информации, а также актуальный опыт европейских стран в сфере энергетики, путей развития альтернативных источников энергии. На основании обзора предыдущих исследований в сфере энергетики и данных о текущем состоянии энергетического комплекса Республики Молдова, были выявлены существующие проблемы стратегического видения ситуации в области энергетической безопасности и устойчивого развития энергетического комплекса Республики Молдовы.

Автором отражены экономические, экологические, инфраструктурные аспекты энергетической безопасности, через призму которых продемонстрирована актуальность данной темы исследования. Исходя из представленных подходов видоизменяется и дополняется понимание сущности понятия энергетической безопасности. Поэтому автором была предпринята попытка сформулировать комплексное и максимально адаптированное к современным реалиям определение.

Предложены некоторые возможные решения, оформленные в виде стратегических направлений и соответствующих шагов по развитию энергетического сотрудничества Республики Молдова в контексте энергетической безопасности. Данные стратегические шаги могут стать основой будущих исследований и разработок.

***Ключевые слова**: энергетическая безопасность, международные отношения, интеграция, энергетический комплекс, Европейский союз*

Received 30.05.2022
Revised 10.06.2022
Accepted 12.06.2022
Published 30.06.2022