

PROBLEMS AND PROSPECTS FOR ENSURING ENERGY SECURITY IN PARTNER COUNTRIES OF THE EU'S EASTERN PARTNERSHIP INITIATIVE¹

ПРОБЛЕМИ ТА ПЕРСПЕКТИВИ ГАРАНТУВАННЯ ЕНЕРГЕТИЧНОЇ БЕЗПЕКИ В КРАЇНАХ-АДРЕСАТАХ ІНІЦІАТИВИ ЄС «СХІДНЕ ПАРТНЕРСТВО»

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The article analyzes the energy potential of such the partner countries of the EU's Eastern Partnership (EaP) initiative as Georgia, Moldova, Ukraine, Belarus, Armenia and Azerbaijan. The key mechanisms of cooperation between the EU and the countries of the EaP region, represented in particular through the thematic platform of the EU's Eastern Partnership Initiative – “Energy Security”, the EU4Energy program, as well as the multilateral agreement “Energy Charter”, have been singled out. It has been found that the priority areas of cooperation between official Brussels and the EaP countries in the energy dimension are the following: 1) strengthening solidarity between states; 2) support for infrastructure development and diversification of energy supplies; 3) harmonization of energy policy and legislation. It has been determined that Azerbaijan is the only country of the EaP region which is energy independent. It has been emphasized that the Eastern Partnership region is important for the EU in terms of energy transit and ensuring of energy security. The data of the World Energy Trilemma Index 2021 for the EaP partner countries, which are calculated by the World Energy Council, have been highlighted and an assessment of the state of the energy sector of these countries has been given. According to this index, countries are assessed for their ability to provide sustainable energy in three dimensions, namely: energy security, energy equity (accessibility and affordability), environmental sustainability. The focus is on the Energy Transition Index, which has been used to evaluate the potential of the EaP countries in the process of transition to alternative energy.

The key problems and prospects for the energy sector of the six countries have been identified. Sound conclusions and key recommendations for improving the energy security of the EaP countries have been presented.

Key words: Eastern Partnership, energy security, EU, Russian Federation, energy potential, green energy, World Energy Trilemma Index, Energy Transition Index.

У статті проаналізовано енергетичний потенціал країн-адресатів ініціативи ЄС «Східне партнерство», як-от: Грузії, Молдови, України, Білорусі, Вірменії та Азербайджану. Виокремлено ключові механізми співпраці ЄС та країн регіону СхП, репрезентованих зокрема через тематичну платформу Ініціативи ЄС Східне партнерство – «Енергетичну безпеку», програму EU4Energy, а також багатосторонню угоду «Енергетичну Хартію». З'ясовано, що пріоритетними напрямками співпраці офіційного Брюсселю та країн-учасниць СхП в енергетичному вимірі є наступні: 1) зміцнення солідарності між державами; 2) підтримка розвитку інфраструктури та диверсифікації поставок енергоресурсів; 3) гармонізація енергетичної політики та законодавства. Визначено, що єдиною країною регіону СхП, яка є енергетично незалежною – це Азербайджан. Наголошено на тому, що регіон Східного партнерства є важливим для ЄС з точки зору транзиту енергоресурсів та гарантування енергетичної безпеки. Висвітлено дані «Індексу енергетичної трилеми» станом на 2021 рік для країн-адресатів СхП, які розраховані Світовою енергетичною радою та надано оцінку стану енергетичної сфери зазначених країн. Згідно цього індексу оцінюються країни за їх спроможністю забезпечити стійку енергетику за трьома вимірами, а саме: енергетична безпека, енергетична прозорість (доступність і цінова доступність), екологічна стійкість. Сфокусовано увагу на «Індексі переходу енергетики», за допомогою якого, зроблено оцінку щодо потенціалу країн-учасниць СхП в процесі переходу на альтернативну енергетику.

Визначено ключові проблеми та перспективи енергетичної сфери шести країн. Подано ґрунтовні висновки та репрезентовано ключові рекомендації щодо покращення енергетичної безпеки країн-учасниць СхП.

Ключові слова: Східне партнерство, енергетична безпека, ЄС, РФ, енергетичний потенціал, зелена енергетика, «Індекс енергетичної трилеми», «Індекс переходу енергетики».

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Formulation of the problem. The issue of ensuring energy security takes one of the prominent places on the European Union's agenda. In view of this, countries such as Georgia, Moldova, Ukraine, Armenia, Azerbaijan and Belarus, which are covered by the official Brussels' Eastern Partnership initiative, also profess similar priorities today. This is confirmed by the Joint Declaration of the sixth Eastern Partnership Summit, held on December 15, 2021 in Brussels. Among the key points of the Joint Declaration are those that have an energy dimension: firstly, intensification of efforts to strengthen energy security and prevent the use of natural gas as a weapon; secondly, modernization of national gas transmission systems with the support of the EU; thirdly, stepping up partner countries' efforts to achieve climate neutrality by 2050 and to speed up the energy transition process; fourthly, from the EU position, support for partner countries in implementing effective carbon offset schemes and/or carbon tax policies, which are in line with the Community's position, in particular on the Carbon Border Adjustment Mechanism; fifthly, attribution of energy security to the spheres of enhanced sectoral cooperation. However, despite the fixation of highly ambitious goals in the field of ensuring of the energy security both by the EU and by the partner countries of the Eastern Partnership initiative in the Joint Declaration and other adopted legal documents, there is a problem of their practical implementation. In addition, a significant threat to the energy security of the partner countries of the Eastern Partnership and the strengthening of their partnership with the EU is the aggressive policy of the Russian Federation, which, on the one hand, initiates exclusively geopolitical projects (for example, «The Nord Stream 2»), thus involving not only the Eastern Partnership countries, but also EU member states, in its well-thought-out "geopolitical game", where the determinants are not energy carriers, but political levers of influence, and, on the other hand, using hybrid threats, increases its influence and lures the EaP countries to its side (in 2021, Belarus suspended participation in the Eastern Partnership).

The study is also actualized by the fact that the involvement of six post-Soviet countries in energy cooperation with the EU is mainly due to geopolitical changes in interstate relations. Energy relations today are politicized, and energy resources are used as a tool for political manipulation. This leads to conflict rhetoric between states, exacerbates political contradictions and threatens international or regional stability and security.

Energy security is a key priority in cooperation between EU member states and participating countries in the Eastern Partnership and has the potential for further development. The EU expects significant progress in energy cooperation with countries in the region. Therefore, in order to ensure effective

cooperation between the EU and the EaP countries, it is important to assess the energy potential of these states. This will make it possible to evaluate the problematic aspects of the energy of the EaP countries and develop priority areas for reform, investment or more effective cooperation in the energy sector of each of the countries in the region.

Analysis of recent research and publications. The problem of ensuring the energy security of the Eastern Partnership countries attracts the attention of both domestic and foreign researchers. Mainly, it is worth noting the scientific works of such scientists as Kseniia Pashaieva, Sabina Strimbovchi, David Yengibaryan, Georg Zachmann, Rauf Mammadov, who in their research have focused on the problem of energy potential of Georgia, Moldova, Ukraine, Armenia, Azerbaijan and Belarus. Statistics on the energy potential of the EaP countries have become an important informational addition to the writing of the article. Various reports, in particular the reports of the World Energy Council on the World Energy Trilemma Index and of the World Economic Forum on the Energy Transition Index, are particularly valuable in the study of energy security of the countries of the EaP region. In addition, special attention should be paid to electronic resources, especially the websites of official institutions of state structures that make decisions in the energy sector.

Highlighting previously unsettled parts of the general problem. The Eastern Partnership countries occupy an important place in the energy security system of the European space. A comprehensive analysis of the energy potential of Ukraine, Azerbaijan, Moldova, Georgia, Armenia and Belarus will help identify problematic and promising areas of EU cooperation with them. The analysis of the World Energy Trilemma Index and the Energy Transition Index will allow to study the current state of the energy potential of the EaP countries and provide recommendations for improving the energy policy of each country.

Forming the goals of the article. The aim of the article is to study the problems and prospects for ensuring energy security of the participating countries in the EU's Eastern Partnership initiative. In accordance with the aim, the following tasks have been formed: to analyze the general trends in the energy potential of the countries of the Eastern Partnership region; to study the state of energy security of countries according to the World Energy Trilemma Index developed by the World Energy Council; to determine the readiness of the countries of the EaP region for the transition to green energy, using the data of the Energy Transition Index calculated by the World Economic Forum; to identify problems and make recommendations for improving the energy policy of each country.

Presentation of the main material of the study. First of all, it must be stressed that the Eastern Part-

nership is an EU initiative that covers six partner countries, specifically: Azerbaijan, Belarus, Armenia, Georgia, Moldova, and Ukraine. The initiative was launched on May 7, 2009 at the Prague Summit to deepen the European Union's cooperation with the countries of Eastern Europe and the South Caucasus. It should be emphasized that the format of cooperation is key here, as the initiative does not provide for EU membership. This confirms the involvement in its composition of Azerbaijan, Armenia, and Belarus, which do not have clear European integration aspirations, as well as internal democratic and market transformations. Accordingly, the EU has a differentiated approach to the development of cooperation with associated EaP partner countries (Ukraine, Moldova, Georgia) and non-associated countries (Azerbaijan, Armenia, Belarus). For example, the EU4Energy initiative, which is a continuation of the INOGATE program with offices in the Energy Community Secretariat, is valid for those EaP associated countries, and the Energy Charter is valid for EaP non-associated countries.

The energy dimension of the EU's cooperation with the EaP partner countries is aimed at implementing the following priorities 1) strengthening solidarity; 2) support for the development of interconnection infrastructure and supply diversification; 3) harmonization of energy policies, etc [1]. However, energy cooperation within the EaP is not always effective, as it strongly depends on the foreign policy of the interested states, their ability to counter political challenges and threats, and thus ensure energy security. The level of efficiency is also influenced by the fact that the partner countries of the Eastern Partnership differ significantly in their international status and development in the energy sector.

The most different in this aspect are the countries of the South Caucasus – Azerbaijan, Armenia, and Georgia. The peculiarity of this region is that in terms of energy it is a kind of bridge between East and West. At the same time, its geographical location between the Middle East, Europe, and Russia creates geopolitical competition, especially in terms of energy production, consumption, and control. Geopolitical competition here takes place between regional actors (Armenia and Azerbaijan) and international actors (the Russian Federation, Turkey, Iran, USA, and EU). The political and economic development of the countries of this region after the collapse of the Soviet Union have been generally unstable, characterized by ethnic and territorial conflicts, social and economic fragmentation of society, lack of democracy, etc [2]. After all, after the 1990s, due to the collapse of energy space and infrastructure, the energy potential of Azerbaijan, Georgia, and Armenia was virtually nullified.

Azerbaijan is the only EaP participant that has its own energy resources and transports them to Europe. It is in the energy sector of cooperation with the EU

that Azerbaijan has achieved the most obvious results. Analysts note that this country has the so-called "three G's" – geography, geology, and geopolitics, ie it has powerful energy resources and is geographically advantageous because it connects the South Caucasus and Central Asia, Europe, and Asia, Russia, and the Middle East. It is no secret that the deposits of the Caspian Sea have created the preconditions for the EU's interest in Azerbaijan. The EU's efforts are aimed at developing Azerbaijan's energy potential as a producer and transit country for oil and gas. Azerbaijan's current gas reserves are almost three trillion cubic meters (tm³), including some in the Shah Deniz field (about 1.3 thousand cubic meters). Besides, gas reserves have been found in the Absheron and Umid fields, each containing 400 billion cubic meters. According to experts, this is enough for Azerbaijan to transport up to 15-20 billion cubic meters of gas to European markets. At the same time, Azerbaijan plans to increase gas production to 30-50 billion cubic meters per year from 2025 [3]. Azerbaijan has established itself as a reliable energy partner for the EU. Concurrently, projects for the development of alternative energy sources – solar, wind, water, etc. – are being actively implemented here.

The opposite is the energy situation in Armenia. The country is characterized by a low level of energy potential. Armenia has the Metsamor nuclear power plant, which has been an important point of the country's energy infrastructure and a key part of the country's energy security for more than 20 years. At the same time, under the Comprehensive and Enhanced Partnership Agreement (CEPA) between Armenia and the EU, Armenia has committed to shut down its nuclear power plant and replace it with a modern way of producing energy [4]. In addition to nuclear energy, there are two thermal power plants in Armenia, which provide 40% of the population with electricity. The largest station is the Hrazdan thermal power plant, which is operated and owned by the Russian Federation. In 2012, the fifth-largest thermal power unit was put into operation, a plant which runs on gas supplied by Iran. Hydropower meets the country's energy needs by 20%. It is important that of all the countries of the South Caucasus, Armenia is actually the most dependent on Russia, which leads here in terms of foreign direct investments. For example, Russian companies finance such large projects as the construction of the Armenian NPP, Hrazdan TPP, etc. Armenia is Russia's only ally in the South Caucasus under the Collective Security Treaty Organization (CSTO), and two Russian bases in Gyumri and on the border with Turkey are also located here. In May 2014, Armenia became a member of the Eurasian Economic Union, which provides for the preservation of preferential prices for Russian gas.

The transit status of the partner countries of the Eastern Partnership initiative deserves special atten-

tion. After all, ensuring European energy security is impossible without cooperation with all energy transit countries (this also explains the involvement of Belarus in the EaP). Among the transit countries, the role of Georgia is particularly important for the EU in this context. Its energy potential comes down to the following aspects as Georgia: 1) is an energy transit country (energy resources from Azerbaijan transit to Turkey through its territory); 2) seeks to expand the pipeline network from Azerbaijan to Turkey and Europe, which will give it additional benefits as an important regional center of energy relations; 3) exports electricity to Eastern Europe, Turkey, and Serbia; 4) plays a key role in the Caspian oil and gas exports to Europe and the Mediterranean; 5) invests in the development of renewable energy, mainly hydropower to reduce energy dependence on Russia [5]. Regarding the latter, Georgia is the second country in the world in terms of the presence of hydroelectric power stations. Experts claim that numerous rivers of Georgia have the potential to not only meet domestic needs but also generate five times more energy for export. In fact, today Georgia exports only 20% of its hydropower potential [6]. Due to the development of hydropower, Georgia is an example of an energy model for other EaP partner countries.

Taking advantage of the favorable geographical location Georgia plays an important role in regional trade in electricity, oil, and natural gas [7]. Thus, thanks to the EaP, significant investments have been involved in Georgia's electricity sector, primarily in oil and gas transportation infrastructure. This has strengthened Georgia's position as a transit country and its regional energy platform. The reforms created the country's image of a "star reformer". Today, the reforms are aimed at diversifying the electricity sector, strengthening competition and security of supply following EU energy legislation. In the oil sector, the government's task is to meet the requirements of EU oil legislation, ie to implement the obligation to maintain minimum reserves of crude and/or petroleum products [8]. In addition to the countries of the South Caucasus, Moldova is an important country for the transit of Russian natural gas from Ukraine to Romania, Bulgaria, and Turkey, with branches to Greece and Northern Macedonia.

The total length of Moldova's three transit pipelines is 247 km ("Moldovatransgaz") with a total capacity of 34.6 billion cubic meters per year. Another pipeline connection with Ukraine passes through Moldova in the north to connect two parts of the Ukrainian network. This pipeline has a capacity of 9.1 billion cubic meters per year and is important for the security of the supply of Moldova, as it is connected with the storage facilities of Bohorodchany in Ukraine [9]. According to experts, the country has potential in the development of solar energy and renewable energy. Moldova promotes the use of

renewable energy as a means of supply diversification. Energy efficiency is also considered as a tool to reduce external energy dependence. In 2017, a new Law on Energy was adopted, which provides for the creation of conditions to limit monopolistic activities in the energy market, its liberalization, and the promotion of transparent competition.

The energy potential of Belarus, like that of Armenia, is characterized by a low supply of natural resources and energy dependence on Russia. Belarus, which occupies third place in the world in peat production, has small deposits of crude oil and natural gas. Thus, only 15% of all energy needs are met by its own production, which makes the state energy dependent on external supplies. Hence, imports of fuel and energy account for about 85% of the total primary consumption of energy resources.

Belarus has two refineries ("Naftan" and "Mozyr") and pipeline networks that supply Russian oil and gas to Europe. Both plants receive oil from Russia through the world's longest "Druzhba" pipeline, which supplies 24 million tons of oil a year to Belarus and 40 million tons to Europe. Gas is also supplied to Ukraine through the "Druzhba" pipeline. Besides, "Gazprom" owns a controlling stake in the "Northern Lights" pipeline, the Belarusian section of which is operated by a local subsidiary of Russian gas producer "Gazprom Transgaz Belarus" (formerly "Beltransgaz") [10].

Ukraine is a key transit country for energy imports from Russia. More than 50% of Russian gas supplies to the EU pass through pipelines in Ukraine. Ukraine covers almost 65% of the total energy demand by domestic production. More than half of the country's electricity is generated by nuclear energy. It is worth noting that Ukraine and Armenia are the only EaP partner countries that produce energy from nuclear energy. Ukraine is also a leading energy consumer among EU4Energy-oriented countries. Its main energy supply was 93 million tons in 2018, which corresponds to approximately 90% of Poland's consumption [11].

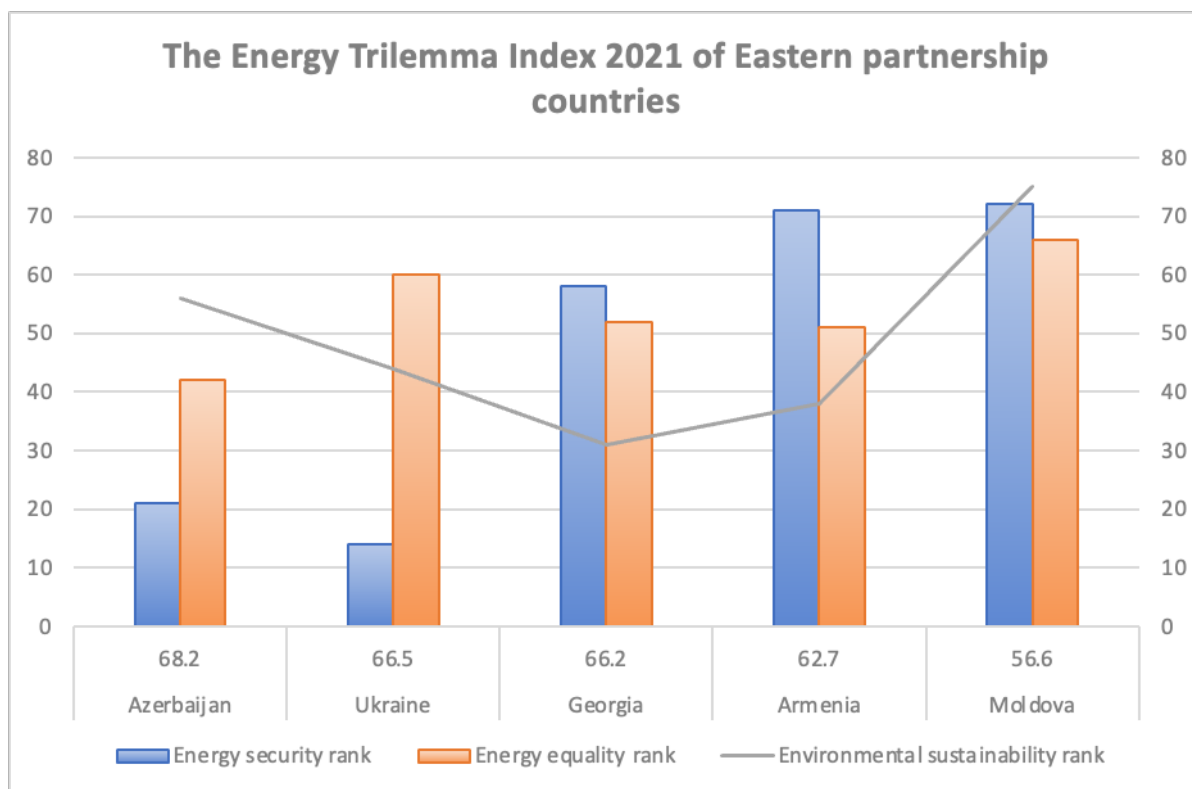
In order to more thoroughly analyze the energy potential of the EaP countries, it is necessary to analyze the World Energy Trilemma Index (Table 1), which will help us determine the real state of affairs in the energy of the studied countries.

According to the analysis of Table 1, which summarizes the data of the Energy Trilemma Index (this index estimates countries for their ability to provide sustainable energy in three dimensions: energy security, energy equity (accessibility and affordability), environmental sustainability in 2021), which is calculated by the World Energy Council, we can conclude that among the Eastern Partnership countries, the most independent energy sector is in Azerbaijan (39th place). Slightly lower in the ranking there are Ukraine (43rd place) and Georgia (44th place). The

energy sector of Armenia (53rd place) and Moldova (68th place) are less protected. There is no data in the organization’s reports on another country in the region, namely Belarus. As we mentioned above, this index has three components: energy security, energy equity, and environmental sustainability. According to sub-indices, the positions of countries in the world ranking slightly differ from the average score. According to the energy security sub-index, Ukraine is in first place (14th place), 58 points ahead of Moldova (72nd place), which is in last place. It should be noted that Ukraine and Azerbaijan are in high positions among all countries of the world according to this indicator. Analyzing the criterion of energy equity of the EaP countries, we can see about the average value of countries in the world ranking. The first here is Azerbaijan (42nd place), the last are Ukraine (60th place) and Moldova (66th place). The data on the environmental sustainability sub-index, which includes the field of renewable energy, are quite inter-

esting. Georgia (31st place) and Armenia (38th place) are in the lead among the EaP countries. In last place is Moldova (75th place). Summing up the analysis of the energy potential of the Eastern Partnership countries, it is important to state the fact that in general the countries of the region are in about the average value (39th-68th place) among 125 countries represented in the statistical report of the World Energy Council. Azerbaijan, Ukraine and Georgia have slightly better positions in the energy sector. Armenia and Moldova need to strengthen their energy potential [13].

According to the World Energy Council, Armenia has virtually no domestic fossil fuel resources and is highly dependent on fossil fuel imports. In January 2021, the Government of Armenia approved the Republic of Armenia Energy Sector Development Strategic Program (until 2040) and the corresponding Action Plan. Priority is given to the development of renewable energy, improving energy efficiency, further extending the life of the Armenian Nuclear



Graph 1. The Energy Trilemma Index 2021 of Eastern partnership countries

Table 1

The Energy Trilemma Index 2021 of Eastern Partnership countries [13].

Position in the world ranking	Country name	Trilemma score	Energy security rank	Energy equality rank	Environmental sustainability rank
39	Azerbaijan	68.2	21	42	56
43	Ukraine	66.5	14	60	44
44	Georgia	66.2	58	52	31
53	Armenia	62.7	71	51	38
68	Moldova	56.6	72	66	75

Power Plant (NPP) (until 2026), development of modern gas generating plants, improving regional connectivity and gradual liberalization of the electricity market. Solar energy is becoming a priority for this country [13].

Regarding the energy sector of Georgia, there is a positive trend in the field of energy security. In particular, the country's dependence on net imports of energy resources is decreasing, the diversity of domestic sources of electricity production and the country's ability to meet oil and gas demand are improving. The dynamic of Georgia is positive in such indicators as public access to electricity, electricity prices and prices for petrol and diesel fuel. Unfortunately, there is stagnation in the field of green energy. In particular, in 2021, the production of low-carbon electricity was slightly decreased by CO2 emissions from fuel combustion per capita. In general, Georgia is demonstrating a trend towards reform of energy sector and the potential for improvement of this area in the future [13].

Having analyzed the energy sector of Azerbaijan, we can observe negative trends in this area, which is primarily due to the authoritarian type of government. In particular, there is a negative dynamic (2011-2021) in all three areas (energy security, energy equity and environmental sustainability). The situation of the state is the best in terms of independence from energy imports, access to electricity and energy prices. The situation with the diversification of energy sources, low-carbon electricity production and CO2 emissions per capita in Azerbaijan is negative. The renewable and green energy sector needs significant reforms. Among the positives, we can state the fact that Azerbaijan is the only country in the Eastern Partnership that is independent of energy supplies, which, in turn, gives it a certain energy geopolitical independence [13].

Despite the fact that the Republic of Moldova is one of the most developed EaP countries, in the ranking of energy potential, it ranks last among the countries of the region. In 2021, positive trends are observed in the indicators of public access to energy sources and energy prices for the population. The situation with energy security and green energy is much worse. Moldova needs to carry out a thorough reform of the energy sector, which it has started to do successfully within the framework of the Association with the EU and within the framework of Energy Platform of the Eastern Partnership [13].

Despite the rather high position of Ukraine in the overall rankings of the energy sector, the following trends should be highlighted: there are some positive developments in the field of renewable energy. However, in 2021 there is an increase in energy and fuel prices in the country, as well as it is covered by the crisis with the supply of coal and an energy crisis potentially can arise. But the tendency towards dependence

on energy imports is deteriorating. Ukraine needs urgent measures to ensure energy security and independence from the Russian Federation [13].

To analyze the potential of the EaP countries, it is advisable, in our opinion, to highlight the data of the Energy Transition Index 2021. The index is calculated by the World Economic Forum and measures 115 countries on the current efficiency of their energy systems in three dimensions – economic development and growth, environmental sustainability, as well as energy security and access to energy – and their readiness to transit to safe, sustainable, affordable and inclusive energy systems [12].

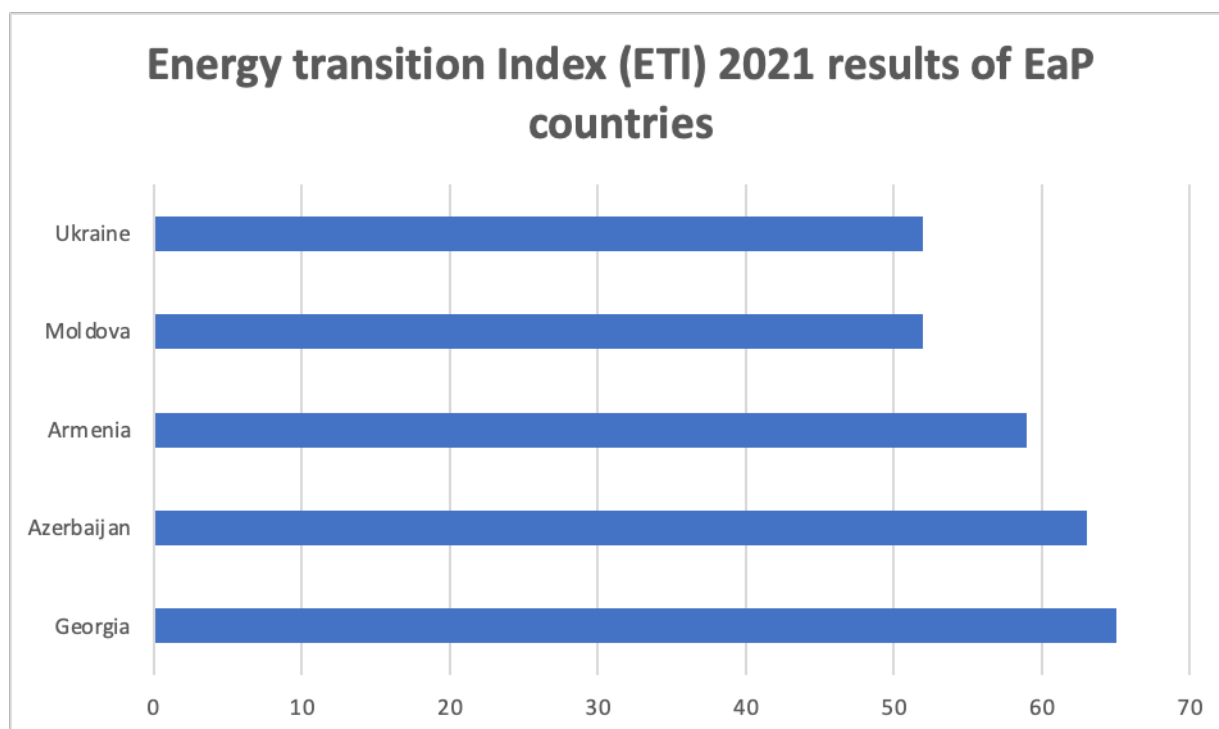
Table 2
Energy transition Index (ETI) 2021 results table of EaP countries [12]

Country rank	Country name	ETI score
33	Georgia	65
44	Azerbaijan	63
57	Armenia	59
90	Moldova	52
91	Ukraine	52

Analysis of the Energy Transition Index allows to talk about the progress in energy transformation over the last decade among the EaP countries in the direction of readiness to switch to green energy. According to the analysis of this index in 2021 Georgia looks the most promising (33rd place). Azerbaijan (44th place) and Armenia (57th place) are in the middle level. Ukraine (91st place) and Moldova (90th place) have rather low positions in the field of energy readiness for the transition to renewable energy sources [12]. However, in the future, the Eastern Partnership countries need to further reform this area. Progress in such areas as environmental sustainability remains uneven and insufficient. Recent threats posed by COVID-19 or climate change have challenged the sustainability of the energy transition. Reducing CO2 emissions should be a priority for the EaP countries in the next decade. The transition to a green economy and the construction of environmentally friendly enterprises are important. In addition, the introduction of new clean energy technologies for the complete decarbonization of all energy systems is promising. The climate problem is a global problem for the whole world, so in this context, the EaP countries should maximize their capacity in the field of renewable energy and in reducing greenhouse gas emissions.

Conclusions and prospects for further research in this direction.

In conclusion, it should be noted that the energy potential of the Eastern Partnership countries is heterogeneous, there are a number of challenges to energy security of the countries of the region. The countries of the South Caucasus – Azerbaijan, Armenia, Georgia – have the greatest potential to increase the supply



Graph 2. Energy transition Index (ETI) 2021 results of EaP countries

of energy resources from Asia to the EU, which will help the latter to avoid total dependence on gas supplies from the Russian Federation. Azerbaijan is the only country among the EaP countries that has its own energy resources and transports them to Europe. The energy sector of Azerbaijan's cooperation with the EU is one of the highest priorities. As for Georgia's potential, it is an important transit country for energy resources from Azerbaijan to Europe, exports its own electricity to Eastern Europe, and its sea routes are key in the export of Caspian oil to European countries. The opposite situation is in Armenia, which is characterized by a low level of energy potential, which is mainly based on nuclear energy, but according to the agreement with the EU, Armenia must close its nuclear power plant and replace it with a modern method of energy production. In terms of energy, Armenia is significantly dependent on the Russian Federation. As for the assessment of energy potential of Belarus, Russian oil and gas are supplied to Europe through its pipeline systems. As of today, Belarus is politically, economically and energy dependent on Russia, from which most energy resources are supplied. Ukraine is a key transit country for energy imports from Russia to the EU. More than 50% of Russian gas supplies to the EU pass through pipelines in Ukraine. It should be noted that Ukraine and Armenia are the only partner countries of the Eastern Partnership that produce energy from nuclear energy. Ukraine is also a leading energy consumer among EU4 energy-oriented countries. The problem is the dependence of the Ukrainian state on Russian gas. A problematic issue for the

Ukrainian energy sector is the construction of «The South Stream» and «The Nord Stream 2», bypassing the Ukrainian gas transmission system, which can bring significant economic and geopolitical losses to Ukraine in the future. Ukraine has the potential to produce its own energy resources. The Republic of Moldova is a transit country for energy resources to the EU. The state is dependent on energy supplies from Russia. According to experts, the country has potential in the development of solar energy and renewable energy. Moldova promotes the use of renewable energy as a means of diversifying supplies.

Thus, the six EaP partner countries have different energy potentials and, accordingly, the presence/absence of energy resources or the ability/inability to take advantage of their transit status determine the level of their energy security. Given current international trends, it is worth noting that a significant foreign policy perspective for the development of the energy sector for the EaP partner countries is to carry out reforms in this area that meet EU requirements and focus on new "green" technologies. These factors enable the countries to resist Russian influence and ensure energy security. However, relations with the EU and the Russian Federation for the EaP countries have their own features.

According to the analyzed data of the World Energy Trilemma Index 2021, we can conclude that among the Eastern Partnership countries, Azerbaijan, Ukraine and Georgia have the best indicators of energy sustainability. More significant energy problems are observed in the Republic of Moldova and

Armenia. In general, there are threats to energy security and sustainability in all countries of the region. The Eastern Partnership countries should reform the energy sector, use mechanisms of cooperation with the EU in the field of energy, in particular the EU's Eastern Partnership Initiative. This will help countries invest in renewable energy, diversify energy supplies, create transparent national energy systems and market conditions. This direction is important in the context of the release of these countries from energy dependence on the Russian Federation, which largely uses the gas factor as a tool of geopolitical influence on the Eastern Partnership countries and the EU.

According to the analysis of the Energy Transition Index data, we can outline that the EaP countries in the short term are not ready to switch to renewable energy sources and need comprehensive reform of the energy sector, stimulating "green" investments. Cooperation between the countries of the region and the EU in the direction of energy transition, in particular better use of the EaP Green initiative, should be a priority.

The partner countries of the EU's Eastern Partnership Initiative have many problems in the energy sector. The key problem is the energy dependence of

most countries in the region on the energy resources of the Russian Federation (except Azerbaijan). Unfortunately, some EaP countries do not have energy security guarantees from the EU (Ukraine). Countries in the region often have outdated energy systems and do not sufficiently use their energy potential to produce their own energy resources. There is no consensus among the countries in the region on building a common energy strategy. A significant challenge is the problem of countries' transition to renewable energy. In order to improve the energy situation, the EaP countries should: 1) intensify cooperation with the EU institutions in strengthening the common security system and attracting additional investment in green energy; 2) negotiate the provision of certain guarantees by the EU in the context of combating energy dependence on Russia; 3) develop common visions of all six countries on energy cooperation; 4) carry out internal reforms in the energy sector of each state and develop a national energy strategy; 5) make the transition to renewable energy sources a priority for each state; 6) take the EU countries that have achieved great success in reforming and transitioning to green energy as an example in this direction.

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