PROSPECTS FOR AZERBAIJAN'S PARTICIPATION IN THE DIVERSIFICATION OF ENERGY SOURCES AND REDUCING THE RISKS OF ENERGY SUPPLY FAILURE TO EUROPE

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Abstract

The article considers the prospects for Azerbaijan's participation in the diversification of energy supplies to the European market, in the conditions of the energy crisis due to the difficult geopolitical situation in the world. Possible ways to reduce the serious risks of failures in the supply of energy resources while ensuring the energy security of the countries of the European continent are given. The negative impact of the crisis that has arisen in the energy market on the global energy supply chain to the EU countries and on the state of the world economy is analyzed. Steps taken by the EU to radically increase supply via traditional EU import routes as well as completely new sources of energy are examined. Various measures implemented by European countries to ensure their own energy security, including the diversification of the supply of energy resources used to generate energy, including through non-renewable mineral substances, renewable organic resources and a number of natural processes, are considered. The ongoing measures in connection with the energy crisis have been considered in order to reduce the negative consequences for the economies of the EU countries. The high potential of Azerbaijan is noted as a country rich in energy resources, and having all the necessary opportunities to influence the state of the gas market in Europe and diversify energy resources in the EU countries by expanding the export of Azerbaijani gas.

Keywords: diversification, export, pipeline, energy resources, RES, natural gas, risks, energy carriers

I. Introduction

Due to the difficult geopolitical situation in the world, the logistics of energy supplies, including natural gas supplies to the European continent, have changed dramatically, and the issue of diversifying energy resources to European markets has become of particular importance. The energy security of the countries of the European continent depends on the reliability of energy supplies on a sustainable and timely basis. Under the conditions of the energy crisis, there are serious risks of disruptions in the supply of energy resources, and effective steps are required to reduce them. Exchange prices for energy resources in the world are not stable with an upward trend, and the price of electricity has increased because of an increase in the cost of energy carriers – against the backdrop of an accelerated recovery of the global economy after the pandemic and due to the geopolitical crisis.

The energy crisis has disrupted global energy supply chains and weakened the global economy. For the European continent, which is heavily dependent on Russian energy resources, gas in particular, there is an urgent need to look for alternative suppliers of "blue fuel" and develop other sources of energy resources. At the same time, European markets have considerable flexibility, and market regulators are making significant efforts to prevent unreasonable price increases and reduce price pressure on end consumers. Due to the possible shortage of energy resources, even the EU countries are planning to conduct one-day anti-crisis exercises (stress test) in the field of gas supply in order to test the energy sustainability of industrial enterprises and sectors of the economy. An important goal of which is to develop internal processes for the distribution of energy load, as well as detailed planning, including the compilation of a list of potential participants.

Among the measures taken by the EU, the priorities are: refusal of long-term contracts for the supply of natural gas and its replacement with fuel from "alternative suppliers"; accelerated filling of underground storage facilities; promoting the development of renewable energy sources (RES); increasing the energy efficiency of production, including reducing the heating temperature of buildings by 1°C. However, the implementation of these measures requires a lot of time and investments, which are not always economically feasible and technologically realizable. Despite all this, Europe remains an important part of the emerging global gas market, but at the same time, its role as a significant buyer of energy resources is gradually decreasing [1, 2].

European states are considering various countries to ensure their energy security, including the Republic of Azerbaijan as a reliable supplier of energy carriers. Azerbaijan confirmed the status of a reliable partner during the peak of the energy crisis in the EU countries in 2022. In this connection, the study of the issue of Azerbaijan's participation in the diversification of energy sources and reducing the risks of failures in the supply of energy resources to ensure the energy security of the continent is an urgent task [3].

II. Methods

In the course of the study, the analytical method and comparison method were used. Methods for collecting, processing and analyzing information were determined by the specific objectives of the study based on a systematic approach.

III. Results and Discussion

World energy consumption is increasing by more than 2% annually, which accelerates the growth of oil, gas, coal and nuclear energy production. Emerging market countries accounted for 80% of the global increase in energy consumption, even though the growth in these countries was below average. The countries of the European continent are taking various measures to ensure their own energy security (ES), including the diversification of the supply of energy resources used primarily for generating electricity and in the fuel industry (Fig. 1).

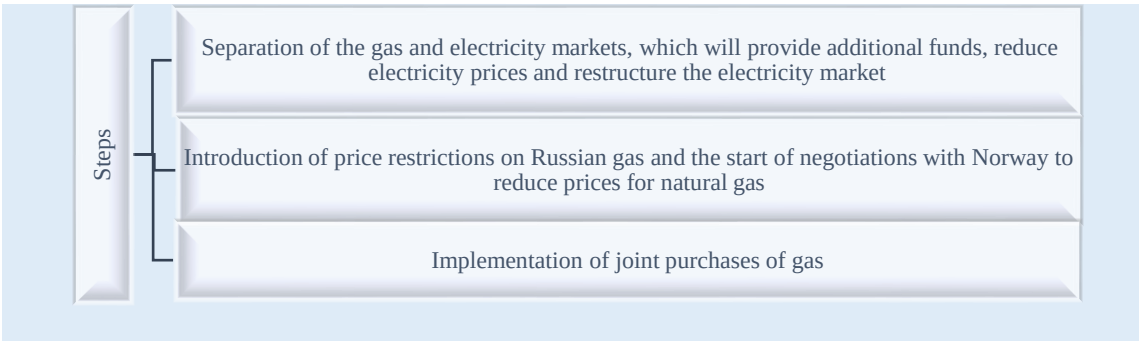

Fig. 1: *EU steps to mitigate the effects of the energy crisis*

Energy security for a country is defined as a way to ensure a guaranteed supply of energy resources on a sustainable and timely basis that does not negatively affect economic performance, an important aspect of which is the ability to insure against potential risks and provide adequate access to energy sources to maintain an acceptable level of social and economic well-being of states. To reduce the risks of disruptions in the supply of energy resources in Europe, taking into account the current crisis in the energy market, it is necessary to diversify the structure of energy consumption, which is a strategic task, and is aimed at strengthening both the economic and political security of the countries of the continent. When providing ES, serious risks are possible, which should be taken into account when planning (Fig. 2) [3, 4].

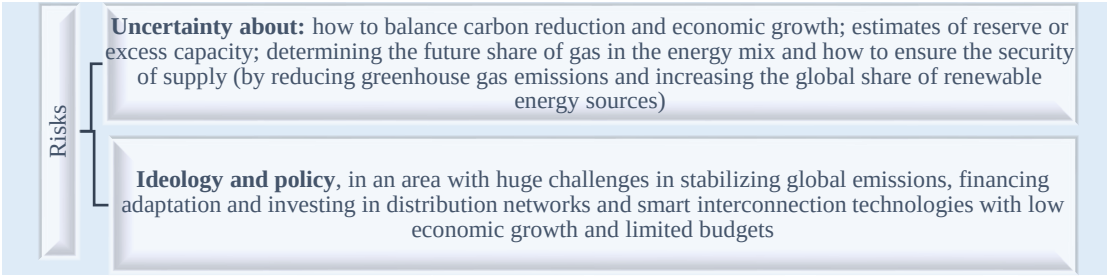

Fig. 2: *Energy security risks*

The European Union is considering all possible directions for obtaining energy from various sources, including non-renewable minerals, renewable organic resources and a number of natural processes (the energy of flowing water, wind, tides, etc.) (Fig. 3).

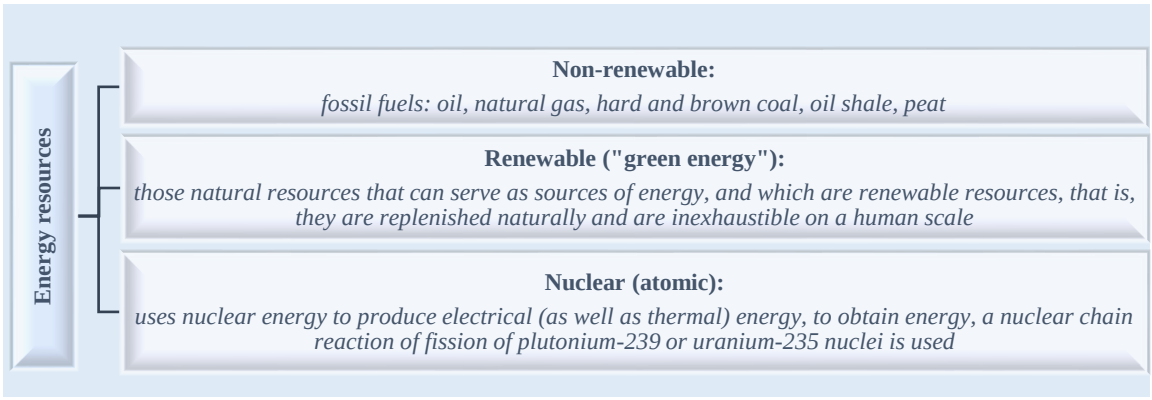

Fig. 3: *Types of energy resources*

Non-renewable energy resources include all types of fossil fuels, the world's proven and final (estimated) reserves in terms of standard fuel are coal up to 60%, oil and gas – 27%, the rest others. According to the forecasts of the American agency "Energy Information Administration", the share of fossil fuels by 2040 will decrease to only 78%, while energy consumption will increase by 56%. This is due to such global problems of modern civilization as the depletion of non-renewable energy resources, environmental pollution and global warming [8, 9]. Before the energy crisis, the main share of energy imports to Europe was Russian exports (Table 1).

The events of the last few years have seriously worsened the state of the world energy market. There were serious risks associated with a failure in the supply of energy resources to the European market, which created a threat to the energy security of the countries of the continent. This was facilitated by the geopolitical crisis and the EU policy in the field of energy use. The widespread development of renewable energy sources (RES) to the detriment of traditional energy sources has led to the fact that the underinvestment of the global oil and gas industry has reached 200-300 billion dollars. However, many companies have already begun to realize the fallacy of the chosen strategy. Recently, Shell announced its intention to increase investment in oil production,

as there are profits in this business: prices are high, reserves are depleted and, despite the prospect of an economic crisis, demand remains growing. However, this does not mean that the development of "green" energy is removed from the agenda, on the contrary, the issue of reducing the impact on nature and climate is still relevant.

Table 1: Main energy importers in the EU (2021)

№№	Energy carriers, importers	Share, %
1	Natural gas	
	Russia	45
	Norway	23
	Algeria	12
	USA	6
	Qatar	5
2	Raw oil	
	Russia	27
	Norway	8
	Kazakhstan	8
	USA	8
3	Coal	
	Russia	46
	USA	15
	Australia	13

Due to the reduction in the export of Russian energy resources, countries of the European continent are looking for new suppliers to meet their needs. In the coming years, the EU expects to find a replacement for almost 100 billion cubic meters of natural gas to replace the Russian gas. Europe is attempting to drastically increase supplies via traditional European Union (EU) import routes as well as entirely new energy sources. Currently, pipeline gas is supplied to the EU from Russia, Norway, Azerbaijan, through Turkey via the Trans-Adriatic Gas Pipeline (TAP), as well as from Algeria and Libya via the Maghreb-Europe Gas Pipeline (MEG). The export of Russian gas to Europe is rapidly declining, and the main volume of Russian gas in 2022 was supplied to Europe via two routes: through Ukraine in the amount of about 42.0 million cubic meters per day and through the Nord Stream-1 Gas Pipeline in the amount of 67.0 million cubic meters per day (at the moment, supplies have been stopped), and the rest of the routes – gas pipelines – are not in operation for various reasons [10-12].

The share of Russian gas in European imports in 2022 fell to 32.7%, while its share in total consumption fell to 21%. In addition, gas exports to Europe via pipelines have almost halved to 85.4 billion cubic meters and at the same time liquefied natural gas (LNG) supplies increased by 12% to 19.5 billion cubic meters. At the same time, gas consumption in European countries decreased in 2022 by 12.7% compared to 2021 to 498.8 billion cubic meters.

Europe is seeking to diversify its energy supplies, and evidence suggests that the UK is an import hub for LNG, which then transports natural gas through pipelines to European countries. Britain's fuel exports increased by £500 million a month on gas and crude oil supplies to the Netherlands and Ireland. This indicates an increased demand on the continent to fill gas storage facilities (UGS) in anticipation of winter [1, 13].

Research shows that in 2023 the volume of capacities newly introduced to the LNG market is one of the lowest on record. At the same time, according to the Forum of Gas Exporting Countries, the volume of LNG imports to European countries (the EU and the UK) this year for the first time in history exceeded the volume of pipeline gas supplies. On the other hand, the crisis in the energy market forced the Europeans to improve energy efficiency. The International Energy Agency (IEA) estimates that in 2022 the world economy was using energy 2% more efficiently than in 2021: the rate of improvement is almost 4 times faster than in the last two years, and almost twice as fast as

over the past five years. At the same time, in order to achieve carbon neutrality by 2050, the increase in energy efficiency should average about 4% per year for a decade.

Since the beginning of 2022, there has been a reduction in gas generation in Europe, in favor of renewable and nuclear energy, and the generation of electricity from gas has decreased. A more important role in these processes was played by the implementation of the plan of the European Commission (EC), according to which the EU countries in the period from 08/01/2022 to 03/31/2023 reduced gas consumption by 15% compared to the average level of the previous five years. At the same time, gas reserves in underground storage facilities are at a relatively high level of more than 78%, while a year earlier – only by 38%.

There is also a reduction in coal generation, electricity generation from coal in the EU decreased by more than 2%, which was affected by the conscious saving of solid fuel, due to the restoration of nuclear generation, which tends to grow compared to last year.

According to the International Renewable Energy Agency (IRENA), in 2022-2027, the volume of renewable energy in the world will grow by 75%, or by 2,400 gigawatts (GW). IRENA has raised its global renewable energy growth forecast by 30% compared to 2021, and over the next five years, wind and solar power will be the main sources (more than 90%) of renewable energy generation. According to the EC plans, by the beginning of 2025, RES will overtake coal-fired thermal power plants (TPPs) and become the largest source of electricity in the world. By 2027, the installed capacity of wind power plants (WPP) will almost double (electricity generation by 570 GW), and solar power plants (SPP) will triple (by 1500 GW) [9-11].

In 2020, electricity production from renewable energy in Europe overtook fossil fuels for the first time, and green generation provided 38.2% of all electricity generation in the EU, against 37% generated by coal and gas stations. RES are gradually replacing coal and nuclear power plants (NPPs) from European generation. In particular, in Germany in 2022, RES will account for 49% of the energy consumed in the country, which is 6% more than last year [10, 14-16].

Recovery of generation is also typical for hydroelectric power plants (HPPs). The dynamics of wind and solar generation was multidirectional. At the same time, for the year as a whole, both generation segments will show an increase due to the loading of new capacities: according to Wind Europe, the EU countries put into operation 15 GW of wind generators in 2022, that is, a third more than a year earlier; in turn, the commissioning of solar power plants has accelerated according to the estimates of Solar Power Europe (Table 2).

Table 2: *Energy generation from different segments*

№	Working out	Dynamics	Indicators, %
1	Biomass production	increased	for 1
2	Fuel oil and diesel fuel	decreased	for 12
3	Share of the segment in the generation structure		
	- natural gas	decreased	from 21.2 to 15.3
	- nuclear power plants (NPP)	decreased	from 24.9 to 24.2
	- solar power plants (SPP)	increased	from 2.4 to 2.6
	- wind power plants (WPP)	increased	from 18.3 to 21.6
	- coal-fired thermal power plants (TPP)	increased	from 16.1 to 17.0
	- hydroelectric power plants (HPP)	increased	from 9.9 to 11.9

Globally, electricity generation from all fuels, excluding oil, gas, nuclear and renewables, has grown at below-average rates, with the exception of North America.

According to the forecast of British Petroleum (BP), global demand for energy resources will grow by 30% by 2035; the increase will be caused primarily by the growth of prosperity in developing countries, but at the same time will be significantly less than the growth of world GDP due to improved energy efficiency. According to forecasts, energy consumption in the world until 2035 will be multidirectional, and will primarily depend on China's transition to cleaner fuels (Table 3). As a result, the share of gas in the global energy sector will overtake the share of coal [9, 17, 18].

In recent decades, the EU has pursued a policy of expanding the number of alternative sources, despite the negative impact of high-energy prices, has not changed its position in the energy sector, including natural gas. In connection with the latest developments in the energy market, the EU supported new routes for gas supplies to its market. Azerbaijan has become one of the reliable suppliers of energy resources to European markets. The demand for energy resources in the European market is still high, which stimulates many producing countries to increase their exports to the EU countries. The Azerbaijan Republic became an active participant in these global processes, according to the results of 2021, the export of electricity from Azerbaijan increased by 522.7 million kWh, or 45.4% compared to 2020, and amounted to 1673.4 million kWh. At the same time, the share of RES in the country's power generation structure is continuously increasing.

The Azerbaijan Republic implements energy export projects in the following areas: crude oil; natural gas; electricity and RES. The export of energy resources from the AR in 2022 had an upward trend (Table 4).

Table 3: *Forecast of energy consumption in the world until 2035*

№№	Energy resources	Growth "+", decline "-", %
1	Oil	+ 0,7
2	Natural gas	+ 1,6
3	Coal	- 2,0

Table 4: Export of energy resources from the Azerbaijan (2022)

№№	Energy resources	Production (%)	Export
1	Oil, million tons	32,6 (80,7)	26,3
2	Natural gas, billion cubic meters including - Europe - Turkey - Georgia	46,7 (47,7)	22,3 11,4 8,4 2,5
3	Electricity, billion kWh		3,0

In 2020, the SGC project was implemented to transport Azerbaijani gas to Italy and Greece. Azerbaijan began supplying gas to Europe via SGC on December 31, 2020, and already in 2021, 10 billion cubic meters of natural gas were supplied to the European market, with a future achievement (including Turkey) of up to 30.0 billion cubic meters. cubic meters per year. The capacity of the gas pipeline is 10 billion cubic meters with the possibility of expanding to 20 billion cubic meters. In July 2022, Azerbaijan and the EU signed a memorandum of understanding that provides for doubling the capacity of the Southern Gas Corridor by 2027.

In 2022, gas exports from the Republic of Azerbaijan increased by 18%; production by 6.5%, and through the Trans-Anatolian Gas Pipeline (TANAP) from the Republic of Azerbaijan to Turkey, the supply amounted to 5.6 billion cubic meters of gas. Oil produced in the "Azəri-Çıraq-Günəşli" (AÇG) group of fields, as well as from Turkmenistan and Kazakhstan, condensate produced in the "Şahdəniz" field are transported through the Baku-Tbilisi-Ceyhan pipeline (South Caucasus pipeline, SCP).

Since the start of commercial operation, the Trans Adriatic Pipeline (TAP) has safely transported 25 billion cubic meters of natural gas to Greece, Bulgaria and Italy. The TAP project is a reliable energy carrier with a capacity of 12 billion cubic meters of gas per year and can be expanded in stages to further improve the energy security of Europe. Gas exports to Europe via TAP began at the end of 2020 and are designed for 25 years, and the volume will exceed 10 billion cubic meters per year. In accordance with the agreement signed between Azerbaijan and the European Union, gas transportation to Europe will be increased to 20 billion cubic meters in the next 5 years.

At present, the capacity of the Trans Adriatic Gas Pipeline (TAP), the European part of the "Southern Gas Corridor" ("SGC", the continuation of the TANAP pipeline to Europe), is 12 billion cubic meters of gas per year. The total length of the TAP pipeline is 878 km, of which 550 km run through northern Greece, 215 km through Albania, 105 km under the Adriatic Sea and 8 km through Italy. The consumers of Azeri gas through TAP are Italy, Greece and Bulgaria, as well as Hungary and Romania in the near future.

In general, Azerbaijani gas may have an impact on the state of the gas market in Europe and on the diversification of energy carriers in the EU countries. The European Union expects that potentially Azerbaijani gas can play an important role in ensuring energy security of supplies and diversifying energy sources in the region of Central and Eastern Europe.

There are potential opportunities to expand gas exports under the SGC project by increasing the capacity of the gas pipeline. In addition to the diversification of energy sources, the EU has proposed a set of measures aimed at creating a trans-border gas supply infrastructure. These measures and the support of new sources of gas production expanded the geography of imports, made it possible to put pressure on the Russian side, but did not lead to a fundamentally different alignment of forces in the European gas market. The countries of the Caspian region, the Middle East and North Africa are also planning to take advantage of EU diversification plans, some of which are already gas suppliers to the EU and Turkey. Azerbaijan has the potential to increase energy exports to the EU through existing pipelines and expand new capacities [11, 19, 20].

The Azerbaijani state company SOCAR, together with four operators of the EU natural gas transportation system from Central-Eastern and South-Eastern Europe, presented the Ring of Solidarity project. Work is underway to attract various investments in infrastructure, which are included in the fifth list of EU projects of common interest. This is because energy cooperation between the EU and the AR was defined in the new plan for a strategic partnership in the field of energy, adopted in 2022. The cooperation is related to the important role that Azerbaijan plays and will play in the diversification of Europe from Russian fuel, in particular through the expansion of "SGC", on the other hand, is based on a common program of transition to "clean energy" with actions in the field energy efficiency, renewable energy, renewable hydrogen, and in the field of prevention of fugitive methane emissions, the obligation to achieve a clean economy with zero emissions by 2050 [20-22].

In 2022, the Azerbaijan Republic had income from the sale of profitable oil, gas and condensate, mainly from the Azəri-Çıraq-Günəşli and Şahdəniz fields (Table 5).

Azerbaijan has large natural gas resources and is working on several sources of expanding gas production through the implementation of the development of new fields such as "Abşeron", "Qarabağ", "Ümid", "Babək", "Azəri-Çıraq-Günəşli" in in the short and medium term for the extraction of additional volumes of gas and its export to partners (Table 6).

Table 5: *Azerbaijan's income from HC sales in 2022*

№№	Hydrocarbons	Revenue, billion dollars
1	Oil and gas	11 587.6
2	Condensate from the "AÇG" group of fields	9 888.8
3	Condensate from the "Shahdəniz" field	328.6
3	Gas from the "Shahdəniz" field	1 114.4
4	Gas from other oil and gas fields	164.4

Table 6: *Gas resources of Azerbaijan*

№№	Stocks	Volume
1	Recoverable, billion cubic meters	933
2	Proven, trillion cubic meters	1,7
3	Projected, trillion cubic meters	4 - 7

An increase in natural gas production due to new gas production centers on the Caspian shelf allows increasing the export of "blue fuel". The AR is expanding cooperation with the countries of the European continent (with the participation of Turkey) in the field of gas business. The creation of a gas hub in Turkey, with the participation of Russia, with the involvement of the Caspian gas producing countries, can have a serious positive impact on the diversification of the supply of energy resources to European markets. The Turkish gas hub can become a platform for deliveries to other countries, primarily to Europe, as well as for determining the price of gas.

Economic cooperation in the development of energy resources between the UK and the AR is expanding, the documents signed by the parties create favorable conditions for the active participation of British investors in various sectors of the Azerbaijan economy, and the UK is the leader in terms of investment in the AR. British companies are actively involved, also in renewable energy projects implemented in the territories liberated from occupation. The creation of a Turkish gas hub has become more relevant in 2022, after the explosion of the Northern Streams gas pipeline.

Being a reliable supplier of energy resources to Europe, Azerbaijan sets itself the following priority tasks: the sustainable growth of a competitive economy and the "green growth" of the country with a clean environment. The AR can provide stability, which is essential for investors. The EU, through the Global Gateway project (the EU strategy for investing in infrastructure projects and establishing economic partnerships based on certain principles), intends to develop partnerships with Azerbaijan in the field of energy development.

In addition to the wide opportunities for the use of solar and wind energy, the AR has a great potential for the production of environmentally "clean" hydrogen, which is necessary for the de-carbonization of heavy industry.

Azerbaijan, as an energy country with experience in diversification, is a competitive country, especially in terms of wind energy and green hydrogen. Increasing the production of electricity from traditional sources, Azerbaijan intends to increase the generation from renewable energy sources. Currently, foreign investors are engaged in the construction of three solar and wind power plants with a capacity of 710 megawatts in the Republic of Azerbaijan. The Masdar Company cooperates with Azerbaijan in the field of production of environmentally friendly hydrogen and its further export to the European market. RES energy, including large hydroelectric power plants, can produce 1.304.5 megawatts of energy, which is 17.3% of the total capacity. The goal was set to increase the production of electricity from renewable sources to 30% of the country's total energy balance by 2030 [20-22].

At the end of 2021, the total installed RES capacity in Azerbaijan amounted to 1.308 MW compared to 1.026 MW in 2012, according to a report by the International Renewable Energy Agency (IRENA). In the coming years, in order to achieve its goals, it is planned to commission 1.500 MW of renewable energy capacities. The potential for offshore wind power in the Caspian Sea is huge and is estimated at 157 GW, while on land the potential is 23 GW of solar energy. In the future, the export of electricity to Europe by cable through Georgia and the Black Sea is being considered.

Azerbaijan is the most important transport and logistics hub in the "Middle Corridor" between Asia and Europe – a route designed not only to transport energy resources, but also vital raw materials and finished products. The European Union is actively working with the states of Central Asia, Azerbaijan's participation in these projects is also being considered. As President of Azerbaijan Ilham Aliyev noted: "Demand for natural gas from new sources is growing in Europe. In this regard, we expect to double the capacity of the TANAP and TAP pipelines - from 16 to 32 and from 10 to 20 billion cubic meters per year, respectively. We do everything to meet the needs of our partners…" "…The Trans-Caspian gas pipeline is not our project. In the Trans-Caspian pipeline project, we are considered a transit country. And we have already publicly stated many times, including myself, that we are ready to provide the necessary transit for our friends and partners in the Caspian, if they decide to build a pipeline…" [18].

During the peak of the energy crisis in 2022, the "SGC" project confirmed that it is the most important source of pipeline gas supplies to the EU, where the volume of gas delivered to the EU via the pipeline increased from 8 billion cubic meters to 11.4 billion. cubic meters (total exports amounted to 22.6 billion cubic meters), that is, more than 40% compared to 2021 (total exports amounted to 19 billion cubic meters), and in 2023 it will amount to 24.5 billion cubic meters .

The increase in the income of the Azerbaijan Republic from the export of energy resources was the result of new geopolitical realities. In connection with the transition to "green energy", some international financial institutions have stopped investing in projects related to fossil fuels. However, today it is obvious that the energy security of Europe cannot be achieved at the desired level without the supply of natural gas.

As the President of the Republic of Azerbaijan Ilham Aliyev noted, "... The launch of projects aimed at the development of "green" energy in the country is an important opportunity for creating a "green energy corridor", which is considered an analogue of such a large project as the "Southern Gas Corridor". In particular, the implementation of large-scale projects in the territories liberated from occupation, including the creation of a "green" energy zone in Karabakh and East Zangezur, will turn the country into a producer and exporter of alternative energy. Given the further increase in the strategic importance of the Southern Gas Corridor project in the energy transition, the expansion of the TANAP and TAP projects has already become a hot topic for Azerbaijan. The expansion of the Southern Gas Corridor until 2027 and other prospects related to the transportation of energy resources will serve to further strengthen the strategic role of our country in the diversified energy supply and energy security of our partners" [18].

Almost completely meeting the national demand for electricity through domestic generation, Azerbaijan also plans to supply electricity not only to neighboring countries, but also to the EU. According to analysts' calculations, the country will be able to export 700 MW of electricity to Europe annually via the Azerbaijan-Georgia-Turkey energy bridge in the future. Such forecasts are based on the country's expert capacity, which is estimated at the level of several billion kilowatts per hour.

It is planned that electricity from the Azerbaijan Republic will be supplied to Bulgaria via power transmission lines available in Turkey. Such deliveries have already been made to Bulgaria and Greece. In 2019, the Azerbaijan Republic began supplying electricity through the territory of Georgia and Turkey to Greece, Bulgaria, and further to Romania and Hungary, it is planned to establish exports to Austria and Italy. Laying of a submarine fiber-optic cable of a high-voltage submarine 500-kilovolt DC electric cable, should have a capacity of up to 1000 MGv and will pass through Azerbaijan, Georgia along the bottom of the Black Sea to Romania.

The ongoing projects in the field of renewable energy and plans to realize the potential of offshore wind energy in the future can make Azerbaijan an important partner for Europe in the field of exporting electricity and hydrogen generated from green energy sources.

The results of the research give grounds to say with confidence that Azerbaijan's participation in the diversification of energy supplies to the European market, despite the energy crisis in the world and the difficult geopolitical situation, is being implemented successfully, has serious prospects and is confirmed by the growth dynamics of the export potential.

Conclusion

Potentially, Azerbaijan plays and in the future will play an important role in ensuring the energy security of Europe by participating in the diversification of energy sources and reducing the risks of disruption in the supply of energy resources. Azerbaijan, as an energy country with experience in diversification, is a competitive supplier of energy resources, especially in terms of wind energy, solar energy and green hydrogen. Increasing the production of electricity from traditional sources, Azerbaijan intends to increase the generation from renewable energy sources, to expand the export of energy carriers to the European continent. The sustainable development of energy production technologies in recent years, as well as global climate goals, are accelerating the transition to "green energy", which is one of the main directions of the energy policy of the Republic of Azerbaijan.

Using its rich natural resources, the AR makes a significant contribution to the global agenda, such as increasing the production of alternative and renewable energy, decarbonization and diversification of energy sources. In the medium term, Azerbaijan seeks to become an exporter of electricity obtained from alternative sources and hydrogen – "green energy".

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