

Participation of Azerbaijan in diversification of natural gas supply routes to Europe

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Abstract. The article examines the conditions, conditions for the functioning and development of the gas transportation system, which make it possible to determine the parameters and directions of diversification of the European gas transportation system, its integration with the pipeline systems of the Caspian and European regions. It is stated that Azerbaijani gas is a new source of natural gas supply to the European market. The implementation of the Southern Gas Corridor, the Trans-Adriatic and Trans-Anatolian international gas pipelines is re-creating the energy map of the continent and creating powerful new infrastructures for the supply of natural gas from the Caspian region to Europe via Turkey. The existing international gas pipelines for the supply of gas to Europe, the geography of its supply and possible options for the development of new export supplies to ensure the energy security of Europe are analyzed.

Keywords: diversification, gas transportation, natural gas, European market, hydrocarbon, pipeline.

Introduction. In general, the capacity of main export gas pipelines from Russia, Norway, Algeria, Libya, Azerbaijan is practically enough to cover the needs of the European market for natural gas, even in the absence of domestic production in Europe. However, for various reasons, including a strategic one, most gas pipelines are not used at their maximum capacity. A typical example is the Ukrainian gas transportation corridor, which with a nominal capacity of 180 billion cubic meters on the western border is used less than half, and not only because of the difficult political situation around it, but also for purely technical reasons. In addition, the directions of flows within Europe are changing, the centers of consumption are shifting, some regions, as part of diversification, are turning to alternative energy sources and new suppliers. As a result of a seemingly surplus capacity market, projects for the construction of new gas pipelines appear.

The large reserves of hydrocarbons (HC) in Azerbaijan are of interest to European countries, where there is a huge demand for energy, including natural gas. The geographical location and successful implementation of joint oil and gas projects have contributed to the fact that for a century Azerbaijan and European countries (including Turkey) have been interdependent partners in the field of HC resources and the main importers of Azerbaijani oil and gas [1, 2].

Purpose of the study. To study the role of Azerbaijan in ensuring energy security of Europe by participating in the creation of new powerful infrastructures and diversification of natural supply routes from the Caspian region to Europe. Analysis of the existing international gas pipelines for the supply of natural gas to Europe, the geography of its supply and possible options for the development of new export supplies to ensure the energy security of Europe.

In recent years, the European gas market has undergone significant changes, both in technical, organizational and regulatory spheres. Being import-dependent on the countries supplying natural gas, the EU countries strive to strengthen energy security, focusing on the diversification of primary sources of energy resources and their suppliers. Considering the real situation, the problem with Ukrainian transit in the absence of additional pipeline capacities will be problematic to ensure the full volume of Russian gas supplies to Europe. In connection with the problem that has arisen between Europe and the main gas supplier, Russia, new opportunities are being created for the development of export and transit of gas for other gas producing countries, including the countries of the Caspian region. In this context, Azerbaijan is of particular importance, given the presence of existing international gas pipelines (IGP) and the exit to the European market. Based on this, one of the key tasks for the development of the Azerbaijani-European gas partnership is to optimize the export strategy of Azerbaijan. One of the priority tasks of the socio-economic development of Azerbaijan, strengthening of economic and geopolitical positions in the world is to consolidate in the markets of the European region, including energy. A comprehensive analysis of the state, conditions for the functioning and development of the gas transportation system allows to determine the parameters and directions of diversification of the Azerbaijani gas transportation system, its integration with the pipeline systems of the Caspian and European regions [1-4].

According to Wood Mackenzie's forecasts, gas consumption in Europe by 2035 will increase from 541 billion cubic meters, and "HIS Market" predicts an increase in demand by this time to 572 billion cubic meters of gas per year [3].

It should be noted that the threat to the energy security of Europe, in particular, is the competition for energy resources with rapidly developing countries, and since it is pipeline transport, in contrast to liquefied natural gas, that constitutes the basis for stable and long-term cooperation, and new Azerbaijani gas pipelines have advantages in European gas market. The implementation of the Southern Gas Corridor (SGC) project is a striking example of more than just successful interaction between the leading oil and gas companies of a number of countries, aimed at developing international cooperation

and ensuring the reliability of supplies. This is also an example of collective strategic thinking, which once again testifies to the effectiveness of joint efforts.

In recent years, the EU has agreed on a number of new goals to strengthen Europe's position in international energy policy, including an energy roadmap to 2050, which presents different scenarios for the next 40 years. The countries of Southeastern Europe take measures and support a secure, sustainable supply of natural gas at affordable and competitive prices, based on the EU energy strategy, to complete the formation of the internal energy market, end the isolation of the member states and facilitate the diversification of routes, sources and partners, including through the development of "SGC". The EU countries emphasize the importance of facilitating access to diversified gas supplies by participating in such large projects as "SGC", gas promotion through interconnecting pipelines and construction of "FSRU". Greece hopes to become a gas "hub" for Southeastern Europe to transport gas to other countries from several points of entry and exit, in the presence of different sources of gas (Azerbaijan, Algeria, Egypt, Israel, Iran, Qatar, Russia, etc.). The EU counts on the ability of "SGC" to meet its needs, at the expense of natural gas from the countries of the Caspian region (Azerbaijan, Turkmenistan, Kazakhstan, Iran) and East Asia (Iraq, Israel, etc.). The interest of "SGC" is due to the growing demand from Europe, whose energy needs will grow by 1% annually until 2026 [1-3].

The main provisions for reforming the national gas markets in the EU, according to the Gas Directive, are: creation of a competitive gas market in Europe and diversification of supplies; lack of internal borders of the EU gas market; the need to take into account the specifics of individual countries when implementing the requirements of the Directive; ensuring equal access to the system for all gas suppliers. The intermediate results of liberalization indicate that the competition artificially created in the market, combined with a number of amendments, did not lead to a decrease in gas prices, but to an intensification of competition between gas distribution companies. Despite the fact that the share of the cellular market continues to grow, this is only a supplement to existing long-term contracts that guarantee reliability, regularity of supplies, stability of prices and conditions, as well as investments necessary for the development of new fields, the implementation of large gas projects, and the creation of transport infrastructure etc. Due to the specifics of the European gas market, gas transportation conditions and limited suppliers, the requirements of the Gas Directive exist for the most part only de jure. The largest importers of Azerbaijani gas and their share in the total volume of natural gas consumption in European countries, etc.

To transport Azerbaijani gas within the framework of a production sharing agreement, the "Baku-Tbilisi-Erzurum" (BTE) or "SCPx" gas trunkline was built in 2006 with a throughput capacity of 20 billion cubic meters of gas per year and began transporting gas from the "Shah –Deniz" to Georgia, and since 2007 - to Turkey. Currently, "SCPx" capacities are used to supply Azerbaijani gas to Europe within the framework of SGC. The SGC project (an abbreviated version of the "Nabucco" project) through which gas from the Caspian shelf is transported to Europe, to Italy, with the prospect of the

possibility of attracting new resources, including from the fields of the Caspian region and the Middle East, consists of three parts: "SCPx"- going through the territory of Azerbaijan and Georgia to the border with Turkey; Trans-Anatolian Pipeline (TANAP) - running through Turkey (initial throughput capacity of 16 billion cubic meters per year, will reach 23 billion cubic meters by 2023 and 31 billion cubic meters by 2026); Trans-Adriatic (TAP) - passing through the territory of Greece, Albania and Italy. An additional gas resource for the SGC gas pipeline (and the future of a full-fledged Nabucco) can be gas from Turkmenistan, Iran and Iraq, as well as, under certain conditions, Russia and Kazakhstan. Thanks to the oil and gas strategy, while developing the energy potential of the Caspian Sea, Azerbaijan has formed a new economic model for the development of the region, expanded political and economic ties between Europe and Asia and become a regional energy and transport hub [1, 2, 5].

The international gas pipeline "UGK" is to become the main channel for gas supplies from the Caspian and Central Asian regions, including the countries of the Middle East to Europe. TANAP's capacity will be: at the first stage 16 billion cubic meters of gas per year (will be directed to the domestic market of Turkey, and the rest of the natural gas will go to the needs of other European countries); at stage II, 24 billion cubic meters of gas per year. The "TAP - TANAP" system will connect the existing and planned gas transmission system (GTS) for gas transportation in South-Eastern Europe with the GTS in Western Europe through Greece, Albania, the Adriatic Sea and Italy, and also allow access to gas resources in the Caspian region and the future The Middle East [6, 7].

According to the EU Regulation on Measures to Ensure the Safety of Gas Supplies, the Albania-Italy offshore section of the "TAP" gas pipeline must operate in both forward and reverse modes. At the second stage, it is planned to connect the countries of the Western Balkans (Montenegro, Bosnia and Herzegovina and Croatia) through the "TAP" IGP to which the "IAP" (Ionian Adriatic Gas Pipeline) international gas pipeline, considered part of the "TAP" - TANAP system, will be connected. IGP "TAP" was selected as a project of common interests (PIS) and as such enjoys EU support. This decision means that IGP "TAP" can ensure the supply of pipeline gas from Azerbaijan to Europe at full capacity within 25 years. The EU exempted the project from regulated tariffs at the initial stage to expand the capacity of 10 billion cubic meters of gas per year, and regulates the throughput of the reverse IGP "TAP" from Italy to Greece. EU internal market rules usually require third party access to all energy infrastructure, including gas pipelines. "TAP AG" has signed various MOUs with the developers of the "IAP" project, including Plinacro (Croatia), BHGas (Bosnia and Herzegovina), as well as the governments of Montenegro and Albania. IGP "IAP" will be linked to the existing GTS of Croatia. In addition, it can be connected to other gas infrastructure facilities, including the Adria LNG terminal in Krk, and it will be a reverse IGP with a throughput capacity of 5 billion cubic meters of gas per year [1, 2, 5, 8].

For Azerbaijan, the "UGK" (SGC) is an opportunity to supply gas to the main consumption centers in Europe for the next decades (the life of a modern gas pipeline can be up to 50 years). For

Turkey, the project is an opportunity to become the largest gas transit country in Europe. In this regard, the "SGC" gas pipeline is a justified step and the first delivery to Italy has already been made. Due to the supplies of Azerbaijani gas, Bulgaria will be able to satisfy about a third of its gas consumption, Greece - a fifth and Italy - about 10%. Negotiations are underway on the possibility of expanding SGC in the future, taking into account the involvement of new participants in the project, such as Turkmenistan or Iran, potentially the participation of Russia and Kazakhstan at the later stages of the project.

Projects for the supply of Turkmen gas to the European market is considering options for supplying gas through the Caspian Sea. Trans-Caspian Gas Pipeline (TCGP) energy infrastructure, to provide a resource base for the "TAP" project (the project remains on the list of priority projects for the EU), this gas pipeline is also considered part of the "SGC" expansion and has a capacity of 30 billion cubic meters gas per year. According to some sources, it is also envisaged to connect to the "TCGP" gas pipeline from Tengiz in Kazakhstan and connect it with Turkmenbashi. This subsea gas pipeline plans to transport gas from Turkmenistan and Kazakhstan through Azerbaijan to Georgia and Turkey and further to the EU countries. In Azerbaijan, the pipeline will join "SCPx", and through "TANAP" and "TAP" to Italy. The envisaged length of the gas pipeline across the Caspian Sea is 300 km [9, 10-12].

Conclusion. Thus, against the background of the European energy transition, modern gas pipelines, including new Azerbaijani projects, have every chance to retain their most important strategic role in ensuring the energy security of Europe and diversification of the continent's gas transportation infrastructure. Azerbaijan, as a gas supplier, has all the capabilities not only to maintain the status of a gas exporter in the region, but can also expand its positions in the future by becoming an energy bridge between Asia and Europe. Analysis of possible risks and new opportunities for Azerbaijan arising as a result of the ongoing changes in the EU's gas infrastructure allow us to determine the main directions for increasing the efficiency of gas exports, including more flexible marketing programs for implementation in Europe.

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