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Article

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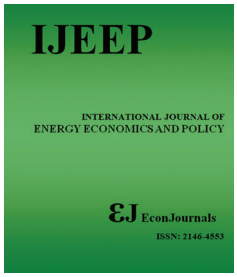

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Issues of Natural Gas Infrastructure Development in South-Eastern Europe

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ABSTRACT

The adoption of the Third Energy Package has become a new stage in the evolutionary process of the European Union (EU) gas market, its liberalization and modernization. Natural gas occupies a significant place in the energy balance of most EU countries; therefore, all EU countries are interested in an efficient and uninterruptedly functioning gas transmission system. In addition to the pan-European gas corridor routes developed by the European Commission, there are a number of significant regional-level gas transportation projects that complement large gas corridors. The article considers the countries of Southeastern Europe of the Balkan Peninsula, which in the future can become one of the main corridors for the supply of natural gas to Europe. However, it depends on the results of cooperation between Russia, Turkey and EU.

Keywords: Energy Supply, Natural Gas Supply, Energy Cooperation
JEL Classifications: Q3, Q4

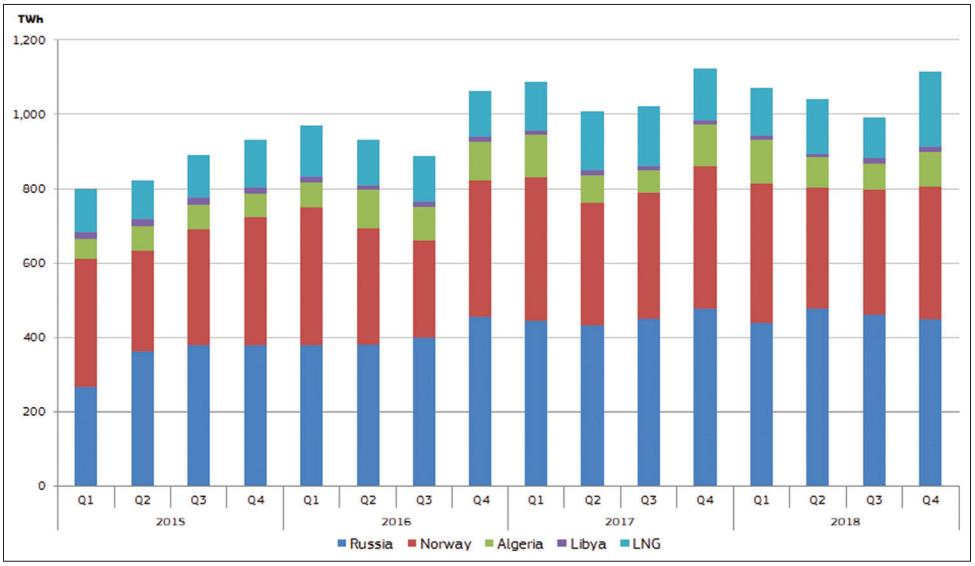
1. INTRODUCTION

Due to the underdeveloped gas transportation system, the gas markets of the Balkan countries and Southern Europe are poorly connected with the markets of North-Western Europe and are largely dependent on gas supplies from Russia. According to Eurostat for 2018, Russia's share in national gas imports of countries such as: Bulgaria, Romania, Slovenia and Serbia amounted to 75-100%, Greece and Italy - 50-75%, Croatia - 0-25% (Eurostat Statistics, 2018). For many years, the main route for gas supplies to these countries was transit through the territory of Ukraine, however, in light of the events of recent years, the risks of restricting supplies in this direction have increased significantly. In addition, the low density of the gas transmission network and the lack of spot trading through gas hubs contribute to higher gas prices than in countries of North-West and Central Europe. In general, the share of Russia in gas supplies to Europe in 2018 amounted to about 40%, depending on the seasonal dynamics of demand (Figure 1).

In northwestern Europe, gas prices are generally lower because the level of interconnection between the markets is higher and the geography of imports is wider (Figure 2). Pipeline gas is supplied to the markets of Northwest Europe not only from Russia, but also from Norway, the UK, the Netherlands, as well as LNG supplies. Landlocked Central European countries (Hungary, Slovakia, the Czech Republic and Austria) have access to gas hub infrastructure such as Baumgarten, CEGH and others, and also have great opportunities to diversify natural gas imports on a market basis.

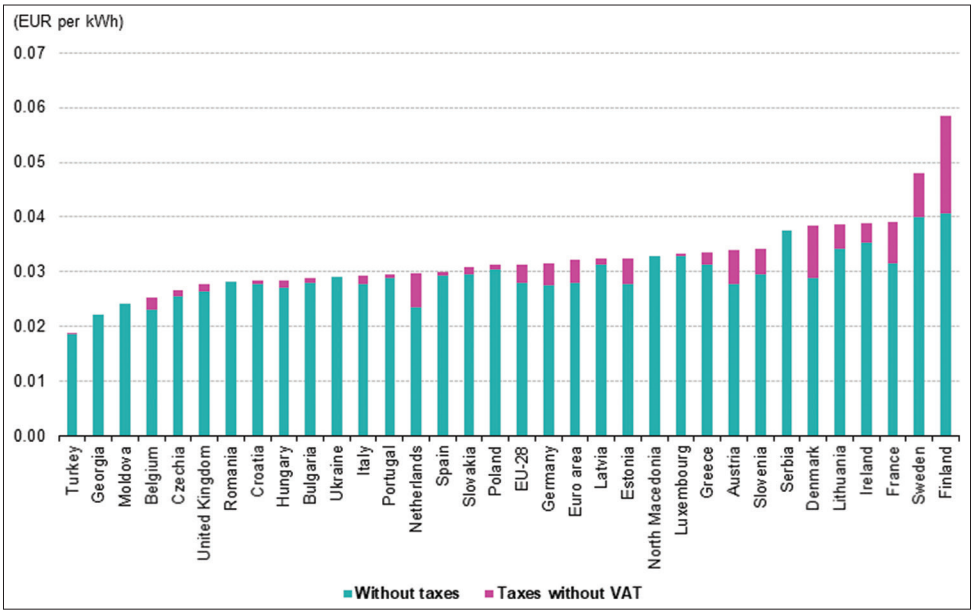
The uneven development of gas markets in different regions of Europe is a risk factor for the energy security of the European Union (EU). Moreover, the lack of diversified routes for gas imports and the underdeveloped market environment creates

Figure 1: European union imports of natural gas by source, 2015-2018



Source: Eurostat, 2019

Figure 2: Natural gas prices for non-household consumers, 2018



Source: Eurostat, 2018

additional risks not only for consumers, but also for gas suppliers, in particular for Gazprom.

2. ANALYSIS

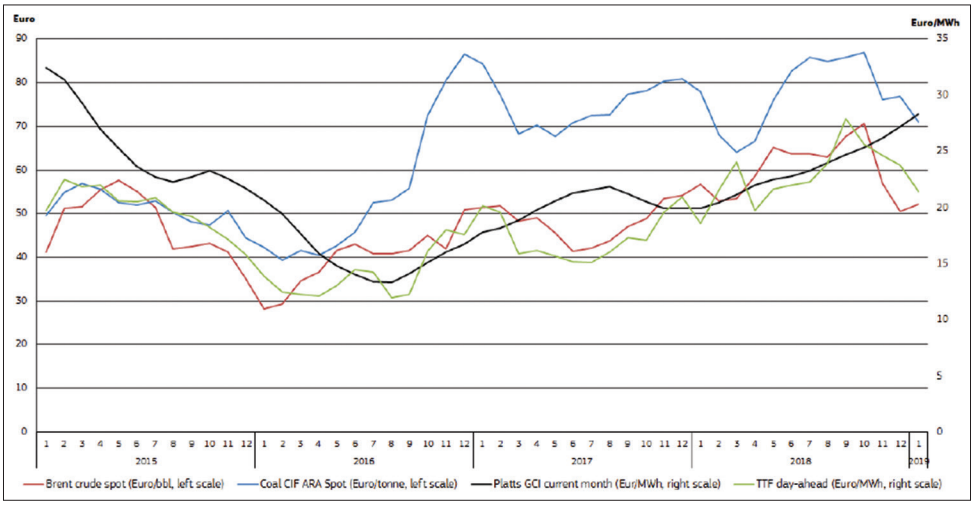
The development of gasification is a strategically important task for the countries of Southeast Europe. Coal still plays a significant role in the energy balances of many countries in the region. This prevents the countries of the region from fully meeting the EU decarbonization goals. In addition, the dynamics of prices for key energy sources in the EU in recent years are unfavorable for coal, and more favorable for natural gas (Figure 3).

The development of the gas transmission system in Southeast Europe can be carried out in several directions. Countries on the Balkan Peninsula such as Greece, Italy and Croatia are included in the route of the Southern Gas Corridor (SGC). SGC (Figure 4) is an energy project consisting of three gas pipelines: South Caucasus Natural Gas Pipeline, Trans-Anatolian Natural Gas Pipeline (TANAP) and Trans-Adriatic Pipeline (TAP). The purpose of the SGC is to supply gas from Caspian Region to Europe. TANAP is a 1841-km route that starts from the Azerbaijani Shah Deniz-2 field, passes through the territory of Georgia and Turkey to the Turkish-Greek border. There it connects with the TAP pipeline, designed to supply gas through Greece and Albania to Italy. The goal of the TANAP-TAP gas pipeline is to supply 6 bcm of gas per year to Turkey and 10 bcm/year to Europe starting from 2020. The pipeline capacity may be increased to 24 bcm, and then even to 31 bcm by expansion of certain sections and looping. Thus, the commissioning of SGC will form an additional route for gas

supplies from the Caspian region to Europe through Turkey as the main transit country (Reuters, 2018).

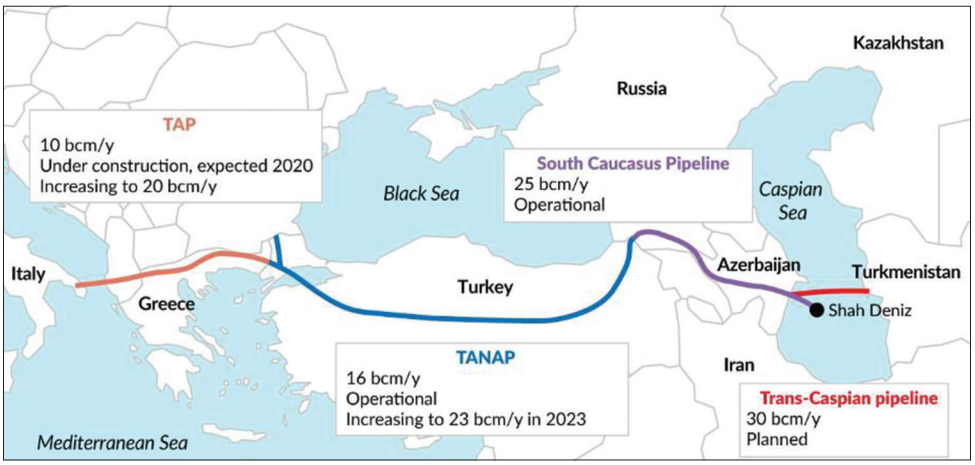
The second important regional project is the BRUA pipeline (Bulgaria, Romania, Hungary, Austria) designed to connect the Romanian national gas transmission system with the gas transportation systems of Bulgaria, Hungary and Austria (Figure 5). The planned capacity of the pipeline will be 4.4 bcm/year, the project involves primarily the expansion of existing sections of the pipeline and the modernization of compressor stations (Roberts, 2016).

Figure 3: Spot prices of oil, coal and gas in the EU



Source: Eurostat, 2019

Figure 4: Southern gas corridor route



Source: Interfax, 2019

Figure 5: BRUA pipeline project

Source: Hart Energy, 2018

The project is carried out in three stages. The first stage is aimed at expanding the capacity of the transmission system between Romania and Hungary. It includes a new gas pipeline from Podisor to Rekash (479 km), as well as a gas metering station and three compressor stations. The first phase is expected to be completed in 2019.

The second phase involves the construction of a 50-km pipeline between Recaş and Horia to connect with Hungary, as well as the modernization of three compressor stations to ensure the supply of 4.4 bcm of gas per year with stable bi-directional throughput between Romania and Hungary. The project also includes the construction of a line with a capacity of 6.0 bcm/year from newly discovered gas fields in the Black Sea to the connection with the main BRUA system in Podisor. According to current plans, the second section will be commissioned in 2020 (Melenciuc, 2018).

The third stage involves the expansion of the East-West gas pipeline system through Romania to Hungary, the exact timing

Figure 6: Ionian Adriatic pipeline project

Source: Three Seas Initiative, 2019

Figure 7: TurkStream pipeline route

Source: EURACTIV, 2015

of its implementation and technical parameters have not yet been determined.

The implementation of the BRUA project will achieve two main goals. Firstly, communication will be ensured between the gas transmission systems of the four states through the construction of interconnectors, which will significantly improve the integration and balancing of the regional energy system in general. Secondly, it will be possible to develop production on the Black Sea shelf of Romania both for domestic consumption and for deliveries to neighboring countries (Roberts, 2016).

The third pipeline that will contribute to the gasification of the Balkan region is the Ionian Adriatic Pipeline (IAP). The IAP project (Figure 6) is based on the idea of connecting the existing gas transmission system of Croatia through Montenegro and Albania to the TAP gas transmission system. The implementation of the IAP project provides for the opening of a new energy corridor for the Western Balkans region within the SGC in order to create a new route for natural gas supplies from the Middle East and the Caspian region (De Giorgio, 2018).

The project envisages the construction of a 540-km gas pipeline from the connection with TAP in the city of Fier (Albania), to the city of Split, which will connect it to the existing gas network of Croatia. This line will have a throughput of 5 bcm, the possibility of reverse supplies is provided as well. The date of commissioning of the gas pipeline is set for 2020, the volume of investments is estimated at 618 billion euros. The EU has high hopes for this route, as it will allow gasification of Albania and Montenegro, the south of Croatia, Bosnia and Herzegovina, as well as connecting these markets with TAP and all the SGC. This, in turn, will increase energy security in CEE, SEE and the Western Balkans.

Another major gas project, the launch of which will have a direct impact on the strategy of energy supplies to southern and southeastern Europe, is the Russian-Turkish gas pipeline Turkish Stream, or TurkStream (Figure 7). This route is intended for the supply of Russian gas to Turkey and European countries through two pipeline branches with a total throughput of 31.5 bcm. The first line is fully focused on the Turkish market. The second line will be aimed at supplying European countries. The laying of the first line offshore section with a total length of 920 km was completed in April 2018. Now ground work is underway to connect to the Turkish GTS north of Istanbul. The first line of the TurkStream is expected to be commissioned at the end of 2019 (TurkStream, 2019).

The main goal of the TurkStream pipeline is to provide an uninterrupted supply of Russian gas to consumers in Southern Europe. Today, about 14 bcm of gas per year enters Turkey through the Trans-Balkan pipeline through Ukrainian territory. However, the current transit agreement with Ukraine expires at the end of 2019, so uncertainty remains regarding the stability of supplies along this route. The first branch of the Turkish stream will fully satisfy the demand for gas on the Turkish market, while the second branch will ensure uninterrupted gas supply to Southeast Europe, in particular, in Bulgaria, Greece and Italy. Russia takes its responsibility to provide reliable gas supplies very seriously and has always fulfilled its contractual obligations in this regard.

3. DISCUSSION

The considered pipeline projects form a sufficiently solid basis for strengthening the energy security of the countries of Southern and Eastern Europe due to the wide opportunities for the supply of natural gas. Nevertheless, there is a risk that the SGC system will not be completely filled with gas due to insufficient supplies from the countries of the Caspian region. Given the high throughput of SGC, the supply of Azerbaijani gas will not be enough for the full use of the pipeline. The probability of gas supplies from Iran due to the difficult political situation remains extremely low, and for direct deliveries from Turkmenistan it is necessary to build a complex and expensive gas pipeline along the bottom of the Caspian Sea, which, in addition, will require the coordination of other Caspian states. In this situation, the Russian company Gazprom remains the only supplier capable of guaranteeing a reliable flow of natural gas through SGC (Khalova et al., 2019). Moreover, there are three potential routes for Russian gas supplies after TurkStream:

1. A northwest route that will implement most of the initial South Stream project. The project involves the development of a pipeline system through Bulgaria, Serbia and the northern Balkans to the Baumgarten hub in Austria or Tarvisio in northeast Italy. Today, this option is considered a priority. For the first half of 2019, Gazprom held negotiations with Serbia, Austria and Hungary, which discussed issues of energy cooperation and the construction of a new gas transportation infrastructure (Gotev, 2015).
2. The southwest route, which is actually a revival of the IGTI/Poseidon project. The IGTI project was developed for the supply of Azerbaijani gas as part of the global SGC route, but as a result, the European Commission opted for the TAP project. The pipeline plan consisted of the Greek land part (623 km) and the underwater part between Greece and Italy (Poseidon project — 207 km). The planned throughput is 14 bcm/year. Gazprom discussed the revival of this project with the Italian company Edison and the Greek company DEPA (Sabah, 2017). In June 2017, three parties signed a cooperation agreement on the organization of the southern route of Russian gas supplies to European countries. Gazprom also held discussions with energy officials in Greece and Italy on a potential route. In the same year, the gas pipeline was included in the Greco-Italian declaration of cooperation (O'Byrne, 2017).
3. TAP pipeline between the Turkish-Greek border and southern Italy can be used. Initially, all 10 bcm/year of supply was intended exclusively for gas from the Azerbaijani Shah Deniz field. However, the TAP is being built in accordance with the Third Energy Package, which states that any expansion of capacity should be open to competition from any supplier. The Turkish Stream has the opportunity to join the TAP thanks to the ratification of the intergovernmental agreement between Turkey and Greece, providing for the development and revival of the ITGI/Poseidon system. The connection can be made on the Turkish-Greek border of Ipsal-Kipa, in the

same place where the TANAP and TAP pipelines intersect (Reuters, 2017).

4. CONCLUSION

All these natural gas delivery options do not contradict each other and can form a complementary system of sustainable gas supply in the region. In this situation, strategic cooperation between Russia and Turkey is of key importance for the success of all the projects considered (Mikhelidze et al., 2017). Russian researchers have already noted that the main direction of the development of the gas industry in Turkey can be strengthening of cooperation with Russian companies and as well becoming a new gas hub for Southern and Eastern Europe, and, hypothetically, gas chemical cluster (Khalova et al., 2019). For the countries of Southern and Eastern Europe, it is Turkey and Russia that are and will be key partners in the field of energy cooperation. In this context, the main goal is to prevent the development of negative political scenarios that could impede the implementation of mutually beneficial projects aimed at improving the energy security of Europe.

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