



## The Black Sea Region Energy Cooperation: Current Trends and Prospects

Anna A. Bakulina<sup>1a</sup>, Olga V. Panina<sup>1a</sup>, Stanislav E. Prokofiev<sup>1a</sup>, Natalia L. Krasnyukova<sup>1a</sup>, Valery L. Abramov<sup>1b\*</sup>, Natalia V. Sergeeva<sup>1b</sup>, Olga V. Loseva<sup>1c</sup>, Tatiana G. Kasyanenko<sup>2</sup>, Elena V. Takmakova<sup>3</sup>

<sup>1a</sup>Department of Public Administration and Municipal Management, <sup>1b</sup>Department of World Economy and International Business, <sup>1c</sup>Institute for Studies in Industrial Politics and Institutional Development, Financial University under the Government of the Russian Federation, Moscow, Russia, <sup>2</sup>Department of Finance, St. Petersburg State University of Economics, St. Petersburg, Russia, <sup>3</sup>Department of Innovation Studies and Applied Economics, Orel State University, Orel, Russia. \*Email: [valabr@inbox.ru](mailto:valabr@inbox.ru)

Received: 05 February 2021

Accepted: 20 April 2021

DOI: <https://doi.org/10.32479/ijeep.11247>

### ABSTRACT

The Black Sea region is one of the most complex regions in terms of energy development. It hosts several major powers and some developing countries that need to cut energy costs. In general, the region is controversial. It is influenced by external actors, and therefore regional stability is very difficult to achieve. In addition, institutional players such as the EU, the Belt and Road Initiative, the Black Sea Trade and Development Bank, etc., have their own vision of the future of the Black Sea region. The article is aimed at assessing the regional balance of power and estimating the interests of the countries of the region. Based on this assessment, the authors have classified the countries in the region, predicted potential alliances, and provided recommendations on how the countries should behave in the region. The key findings comprise the rejection of the two hypotheses: the countries of the region cooperate mainly through similar institutions; and the countries of the region can efficiently cooperate within the framework of a single strategy. The novelty of the article is in a new look on the regional distribution of power and new strategies for cooperation between countries in the region.

**Keywords:** The Black Sea Region, Energy Sector, Strategy, Institutions, Balance of Power

**JEL Classifications:** F59, Q48

### 1. INTRODUCTION

The wider Black Sea region has always been a region with significant energy and political challenges. The Black Sea region has great potential as a transport route and logistics hub between Asia and Europe; in addition, it also provides opportunities for trade between the Gulf States and Europe, encompassing four different economic, political and cultural formations. The European formation is represented by the EU countries (Romania, Bulgaria) and the European Union as the main institutional player in the region, Moldova and Ukraine. The Asian vector is represented by Azerbaijan and Georgia, and the China Belt and Road Initiative is an institutional player on this side. The Middle

East vector is represented by Turkey and Iran, which can be included in the wider Black Sea region (Hamilton and Mangott, 2008; Winrow, 2007). Russia tries to play its own game, but, as a rule, acts in accordance with its economic interests, creating institutions that depend on its policies and financial donations (for example, the Black Sea Trade and Development Bank [BSTDB]).

In addition to the mentioned intersection of interests, there are several conflicts in the region, the most recent of which are the Russian-Georgian conflict in 2008, the Russian-Ukrainian conflict over Crimea in 2014, which continues to the present, and the Azerbaijani-Armenian conflict in 2020. Such a bunch of contradictions, including the economic pressure of the EU on

Russia and the desire of third parties such as the United States and China to seize regional power (Donnelly, 2020; Sautin, 2018), creates a significant imbalance in the region.

The authors aim to study energy cooperation in the region, taking into account the above facts and to develop the best strategy for the main regional players to achieve their goals. The choice of the main players, the comparison criterion and the system for determining their goals are described in the Methodology.

The novelty and practical significance of the article are explained by a new approach to the analysis of the region, based on energy cooperation as a force for creating healthy competition in the market and economic goals that can be achieved without a military conflict.

### 1.1. Literature Review

The hypothesis of the article, specifically the assumption that the countries of the Black Sea region can have a single development strategy, is based on (Górka, 2018), where it is argued that the Three Seas Initiative is efficient in the EU. At the same time, Vespreamanu and Golumbeanu (2018) stated that the Black Sea region can be the subject of a single development strategy, at least in the environmental field. Another position is expressed by Sharyi et al. (2019), who pointed to high competition as the main factor in the regional unrest, however, without analyzing the fundamental political causes of this competition.

The hypothesis that the countries of the region can cooperate based on the similarity of regional institutions is covered in (Ivan, 2016), the author compared the Black Sea region and other regions and came to the conclusion that the remoteness of institutions in the Black Sea region is high. Poiana (2015) clearly formulated the energy aspect of the Black Sea cooperation and stated that countries seek to pursue their own interests, and not common interests in the region.

Wege (2015) demonstrated the key role of the region in energy and came to the conclusion that Russia and the EU cannot cooperate in the Black Sea region.

## 2. METHODOLOGY

The authors discuss the wider Black Sea region, which includes the following countries: Russia, Georgia, Azerbaijan, Iran, Turkey, Bulgaria, Romania, Ukraine and Moldova. These countries are divided into four major groups: European countries, Middle East countries, Asian countries and Russia. Within each group, the

authors have selected the major player(s) based on (1) GDP, which shows the economic power of a country, (2) energy production and consumption, which allow to assess the size of the energy market, and (3) the military power (Global Firepower, 2020), demonstrating the political and military potential. The results are presented in Table 1.

As it follows from Table 1, Russia, Azerbaijan, Iran and Romania are the four major regional players.

Based on the data in Table 1, the authors have put forward a hypothesis that there may be a single strategy, which is best suited for all the countries, since there is an obvious leader, Russia, and regional subleaders, which can make other countries follow their strategies.

Table 2 demonstrates another important classification by position in the energy market.

Based on Table 2, the authors have put forward a hypothesis that countries from the same regional group can form cooperative strategies based on the similarity of the institutional development of these countries.

Further study will focus on forecasting the energy balance of each country in the region and on analyzing the country's energy policy goals. Energy balance can be predicted using regression analysis. These tools will allow to prove or reject the two hypotheses.

The structure of the study for each country is as follows: (a) the current state of the economy and energy market; (b) the goals of the country's energy policy (those related to the Black Sea region); (c) analysis of the energy market.

Based on the forecasts, it will be possible to compare the best strategies of the major players in the region and develop a framework for regional energy partnerships.

The analysis of groups of countries is carried out on the basis of the common goals of the countries of this group in the region, which allows to give recommendations on the institutional development of cooperation in the Black Sea region.

## 3. RESULTS

### 3.1. European Countries

When speaking about the European countries of the region, such institutional investors and regulators as the European Union (EU)

**Table 1: Countries by the criteria of major players selection**

Country	GDP (billion \$US)	Energy production (ktoe)	Energy consumption (ktoe)	Military power (Power index)
Russia	1460	1,484,134	514,447	0.0681
Georgia	16	1251	4418	1.6679
Azerbaijan	42	55,397	9,213	0.9463
Iran	611	406,252	200,300	0.2191
Turkey	649	40,367	102,960	0.2098
Bulgaria	68	11,877	10,161	0.8916
Romania	249	25,061	24,241	0.6177
Ukraine	142	60,883	51,458	0.4457
Moldova	11	818	3171	–

Source: Created by the authors, based on (Global Firepower, 2020; IEA, 2020).

**Table 2: The regional economies by position in energy market**

	Europe	Asia	Middle East	Russia
Exporters	–	Azerbaijan	Iran	Russia
Importers	Romania, Moldova, Bulgaria, Ukraine	Georgia	Turkey	–

Source: Created by the authors

and the European Bank for Reconstruction and Development (EBRD) should be mentioned. The EU has a strong influence on the energy sector by introducing regulatory measures to promote green energy, while the EBRD is investing in an energy project, thereby helping to implement the EU's energy policy. At the same time, EBRD investments do not have a significant impact on the energy sector of the Black Sea region, they cannot be taken into account due to their statistical insignificance for all countries except Moldova, but even there the volume of financial support is low (1,395 million euros) (EBRD, 2020).

### 3.1.1. Romania

Romania's energy market is not very diversified, it is dependent on gas imports from Russia, but due to the path dependence, until recently, Romania was a net exporter of electricity (Pociovalisteanu et al., 2010; Stet, 2017). But in 2018-2019 the situation changed, and today the country depends on energy imports even more than before (Cîrstea et al., 2018). Recent years proved the inefficiency of the country's electric grids, inherited from the communist past, and at the same time demonstrated that, despite this inefficiency, this is the only option for the country to start developing a new, better energy infrastructure.

At the same time, the country is under pressure from the EU, since according to the European Green Deal – Investment Plan for a Sustainable Europe (European Commission, 2020), the country is obliged to become carbon neutral by 2050, which means increased costs of renewing the energy system. Romania's most serious problem is the lack of financial resources to carry out such a large-scale transformation, since in 2019 the country faced significant political difficulties (Vilcu and Timu, 2019).

The main goals that the country pursues in its energy policy are as follows. (1) Romania wants to get cheap gas and get additional financial resources for its budget by providing gas transit services. (2) The country needs to increase its financial reserves, so it seeks opportunities to use its available natural resources to lower energy prices for the government. This can be achieved through the use of public energy companies, which play a major role in the Romanian energy sector (Paun, 2017). (3) The country wants to comply with the EU recommendations on clean energy, but it needs external financial resources for the development of green energy.

### 3.1.2. Bulgaria

The energy sector in Bulgaria is very similar to the Romanian one with several important differences. While Romania relies primarily on Russian gas, Bulgaria is trying to build its own energy system because it has more financial resources (despite a lower GDP) and a more stable political situation (proving that political stability is the key to sustainable development). Bulgaria's energy system

is much more depreciated than the Romanian one (Nitzov et al., 2010) and mostly relies on coal. This leads to difficulties in meeting the EU green energy requirements and conflicting relations with the EU authorities (Ivanov, 2014). In this situation, the country pursues the goal of renewing the nuclear energy system through the construction of new nuclear power plants, believing that this is the only option for the country to produce its own energy.

The main goals of the country are: (1) to reduce carbon dioxide emissions to avoid further pressure from the EU; (2) to attract partners for the construction of the Belene nuclear power plant (companies from Russia, China and the United States have shown interest in the project); (3) attracting investors in the field of green energy and in the energy sector of the country as a whole.

### 3.1.3. Moldova

The energy market in Moldova is underdeveloped, the country depends on energy imports from Ukraine and Russia for 98% (Zadnipru, 2011). The energy generation facilities in the country are represented by one power plant. The country is at serious risk of energy shortages.

The main goals of the country are to provide its citizens with cheap gas and to attract investments in the energy sector in order to transform it and reduce risks.

### 3.1.4. Ukraine

The Ukrainian energy market today is practically unpredictable, as the country is in a deep crisis. In fact, the Ukrainian economy has not recovered from the crises of 2008 and 2012. An important fact about the Ukrainian energy market is that it can provide 65% of energy demand through domestic energy production (Kytaiev et al., 2020). The country possesses quite significant oil reserves and inherited Soviet nuclear technologies, so a significant part of the country's electricity is generated at nuclear power facilities.

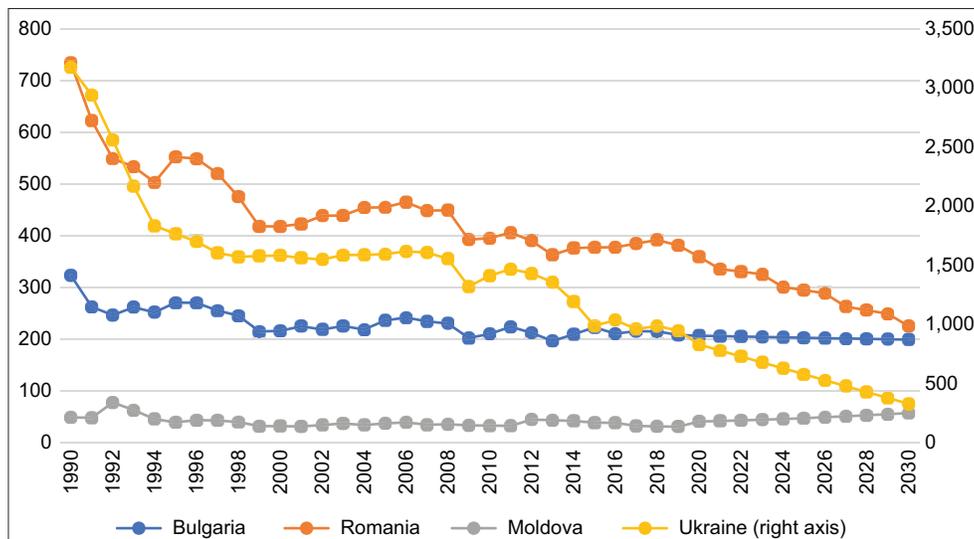
The country received significant assistance from the International Monetary Fund (IMF) and today, despite this, its economy does not function normally. Consequently, the prolongation of IMF assistance to the country is unlikely. The country tried to develop green energy, but due to high buy-tariffs, the country's economy cannot withstand the extension of this regime, and in 2020 purchase tariffs were reduced, which reduced the country's potential in green energy.

As follows from the above, the main goals of the country are to purchase cheap gas from European companies, since cooperation with Gazprom is impossible in the current political situation, and to get revenues from gas transit from Russia to Europe.

The overall analysis of energy demand trends is presented in Figure 1.

The only country that has a growing demand for energy is Moldova, but its market size is insignificant in order to generate statistically significant trends. The overall decline in energy demand in the European group of countries is controversial, since the modernization of the energy market, primarily for a greener

Figure 1: Demand for energy, TWh



Source: Created by the authors, based on (Enerdata, 2020)

energy sector, is expensive, and the less developed EU economies do not have sufficient financial resources for this. The authors tend to predict a long-term decrease in energy consumption, but with the plate at the end of the forecast period, which will require significant financial resources to overcome.

The country pursues the following goals: (1) investment in the green sector, (2) cheaper hydrocarbons, (3) prolongation of sanctions against Russia, (4) further support from international organizations.

At the same time, European countries may have a common goal of reducing the Russian presence in the region, since the exogenous energy demand variables of Romania, Ukraine and Moldova include Russian energy supply. This leads to the conclusion that Russian energy policy affects the domestic demand for energy resources of these countries, including Ukraine, a transit country with a significant amount of energy resources on its territory (Sauvageot, 2020).

### 3.2. Asian Vector

While most European countries are net importers and consumers of energy resources, the countries in Asia and the Middle East and Russia are mainly exporters and suppliers of energy resources to the region. In this regard, we should mention the Belt and Road Initiative (BRI), which can bring significant benefits to regional economies (van der Putten, 2017; Yellinek, 2020), but investments within the BRI should be carefully assessed to avoid sinoization and a significant Chinese presence in the region, as none of the regional players are interested in the emergence of new big powers in the Black Sea region.

#### 3.2.1. Azerbaijan

Like Russia, Azerbaijan is one of the main exporters of oil and gas in the region (Falkowski, 2018). Since the 1990s, the country has overcome several waves of energy reforms, but even today, almost 90% of the country's exports are hydrocarbon exports. In this regard, the country's energy market is highly developed, with

a good infrastructure for oil and gas transportation and a large volume of financial resources generated from this source. The recent conflict over Nagorno-Karabakh, won by Azerbaijan (Hess, 2020), has proven that the country has high political potential in the wider Black Sea region. Thanks to good relations with the United States (Öztarsu, 2019; Yıldırım, 2012) and the pro-American countries of the Persian Gulf, the country has avoided serious consequences of sanctions against one of its main partners, Russia. A good economic situation (which largely depends on changes in oil prices) and significant financial resources allow the country to develop alternative energy (Vidadili et al., 2017). As a result, the country's energy balance is changing, and more hydrocarbons are exported.

The main goals of the country in the Black Sea region are as follows. (1) Establishing serious ties with oil and gas importing countries such as Bulgaria, Moldova, Romania and Turkey. (2) Maintaining low competition in the hydrocarbon markets in order to obtain additional profit from the export of hydrocarbons. (3) Reducing Russia's share in the energy markets. (4) Partnership with foreign companies in the field of green energy. Azerbaijan, as a significant player in the region's energy market, is expected to achieve some of these goals.

#### 3.2.2. Georgia

Georgia has a unique natural and energy potential that can be used in the future to overcome the current deficit in the energy balance. The country has a cheap energy production cost (Jishkariani, 2019; World Experience for Georgia, 2008), but it does not use this advantage, which may be explained by the conflict over Ossetia that greatly influenced the Georgian economy. In this context, the country's economic recovery is closely related to external financial resources, which can be acquired either with the help of international organizations or through private investment in the country's economy. Another possible way is the development of tourism, taking into account the abundance of tourist attractions in the country.

In this regard, the main goals of the country are: (1) a stable political situation in the region; (2) investments in green energy; (3) cheaper energy resources; (4) support from international investors.

The demand trends in the energy market of the studied countries are shown in Figure 2.

Asian countries, unlike the European ones, without taking into account the net energy balance (Azerbaijan is a net exporter, and Georgia is a net importer) have a growing demand for energy. This is a sign of economic growth and economic recovery.

### 3.3. Middle East Countries

#### 3.3.1. Turkey

Turkey is one of the key energy consumers in the region due to its high economic potential and rapid economic development (Yilmaz-Bozkus, 2019). In this regard, the country needs significant amounts of energy resources. The country pursues a dual energy policy, since on the one hand, Turkey supports European policy, and on the other, it needs Russian hydrocarbon exports. Turkey also supports the diversification of hydrocarbon imports as imports from Iran are discouraged for political reasons (MacGillivray, 2020), due to the paradox of Turkish-Iranian relations in the Syrian crisis, but imports from Azerbaijan and other potential players in the regional market are welcome. In addition, Turkey is a transit country pursuing a policy of increasing revenues from gas transit. The construction of TurkStream has a significant impact on the country's economy and energy (Garding et al., 2020). The country's electric grid and power distribution system is developed, the country seeks new sources of energy, but is not forced to do so urgently either by economic circumstances or by regulatory measures.

The goals that Turkey pursues in the region: (1) diversification of energy exporters; (2) lower gas prices; (3) active construction of new pipelines. These goals will allow Turkey to take a strong position in the energy market and be a reliable partner in the energy field.

#### 3.3.2. Iran

Iran's energy market is highly dependent on the position of other countries regarding sanctions imposed against the country (Chaziza, 2020; Sashi and Bhavish, 2019). Iran can produce

significant quantities of hydrocarbons and can export them, but sanctions limit the country's capabilities. Iran does not have access to the Black Sea region, but its high energy potential requires its inclusion in the wider Black Sea region.

The country's main goal is to end the sanctions imposed on it.

Demand trends in the Middle East countries are shown in Figure 3.

Figure 3 illustrates the growing demand for energy in the Middle East countries of the region. At the same time, Iran has the potential to increase energy production and export. In this regard, domestic demand, as in the case of Azerbaijan and Russia (which will be proved below), cannot match the supply of energy exports.

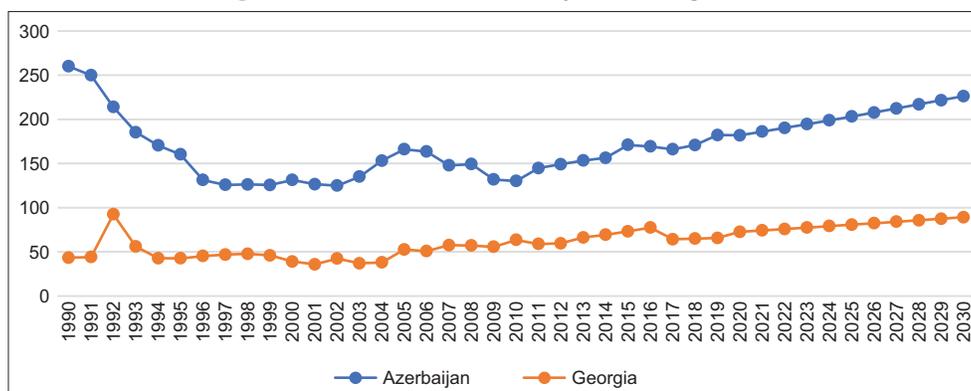
### 3.4. Russia

Russia has the largest energy exports in the region and the most ambitious goals in this area. First, Russia seeks new markets for its hydrocarbons (Alekseev et al., 2019), especially in a situation where the EU has adapted the plan for a greener future. The Black Sea region provides significant opportunities for it, especially net energy importers. Second, pipeline construction and competition with Azerbaijan and Iran for oil and gas exports force the country to develop more efficient production and transit strategies. Another important factor is nuclear energy and the potential for technology export. Export of nuclear energy technologies also presents great opportunities for the country. The Black Sea countries have a high demand for nuclear energy (Fedchenko and Anthony, 2018; Pachi and Scutaru, 2020), so Russia seeks new contracts in this area.

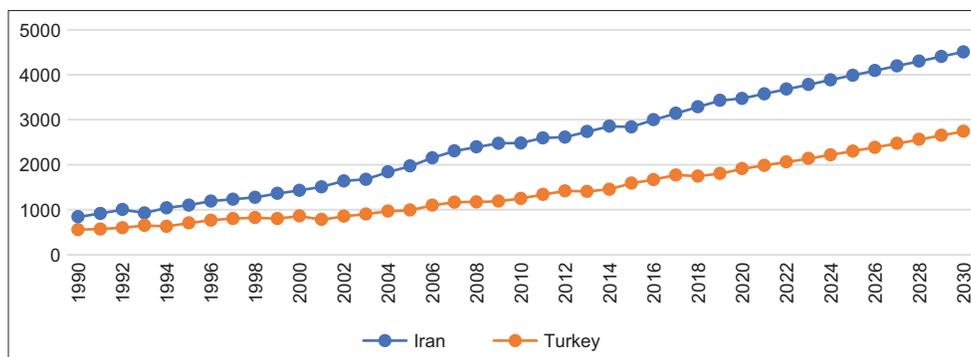
The main goals of Russia in the Black Sea region are: (1) regional dominance in the political, economic and cultural spheres; (2) growth in energy exports and increase in energy prices for hydrocarbons; (3) creation of nuclear power plants; (4) construction of new pipelines to Europe; (5) peaceful and sustainable growth of the region, since in the event of instability, the demand for energy falls; (6) easing EU sanctions against Russian companies. All these goals are equally important for the country, so its interests in the Black Sea region are very high.

Figure 4 demonstrates that Russia, like the countries of Asia and the Middle East, has a general upward trend in energy demand.

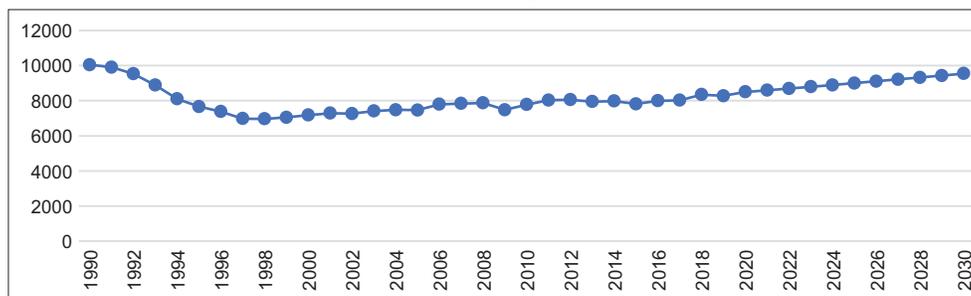
Figure 2: Demand trends of Azerbaijan and Georgia, TWh



Source: Created by the authors, based on (Enerdata, 2020)

**Figure 3:** Demand trends of Iran and Turkey, TWh

Source: Created by the authors, based on (Enerdata, 2020)

**Figure 4:** Russia's energy demand, TWh

Source: Created by the authors, based on (Enerdata, 2020)

In this regard, part of the energy produced in the country is sold on the national market.

Industrial demand for energy in Russia is growing, so the demand for energy in the country is growing, at the same time, energy production, primarily hydrocarbon production, cannot match the growth of the industry.

### 3.5. Goals Matrix and the Regional Groups Interaction

All the studied countries have their own goals in the region. To prove the existence of institutional groups, the authors have built an institutional matrix, which includes international institutions that operate in the region, namely the EU, EBRD, BRI and BSTDB, as well as third-party players – the United States and China.

Table 3 demonstrates that the main regional institutional influencers are the EU and BRI, which have recently entered the region (Weitz, 2020). Other institutional players do not receive full support from major regional players. Another important finding is that Russia and Iran have the same institutional matrix as Azerbaijan and Turkey, which indicates the possibility of an energy alliance between the four countries, or at least a partnership between the two pairs (Russia and Iran are already economic relations via free trade agreement [FTA] [Karami et al., 2019]).

Figure 5 shows the energy supply of the countries in the region.

The constantly growing energy supply and falling demand in the European group of countries, along with the deep US interest in the region, lead to competition in the energy market between energy producers (the United States among them in recent years (Levy,

2012; Sarica and Tyner, 2016)). The result of this competition was the Third Energy Package (Konoplyanik, 2011), difficulties with South Stream (Bros, 2015; Franza, 2015), numerous conflicts between Russia and Ukraine over gas transportation, etc. The United States as a new player in the regional market is interested in instability on it, therefore, it will stimulate regional tension. The energy sector may become one of the most promising in the US foreign policy in the region.

Taking into account the results obtained, BSTDB tools can be excluded from the analysis due to the low role of the institution in the conglomerate of goals of the regional players.

## 4. DISCUSSION

It follows from the above results that there is no joint cooperation strategy for all economies of the region. The results in Table 1 and their comparison with Table 3 lead to the conclusion that all the regional groups, except for the European one, do not act as a single whole, moreover, the countries tend to form alliances with groups from other regional blocs, so there is no synergy that can be obtained from cultural unity.

The strategies that the countries pursue in the region are rather chaotic. The authors have figured out the main cooperation strategies for the main blocs of power in the region.

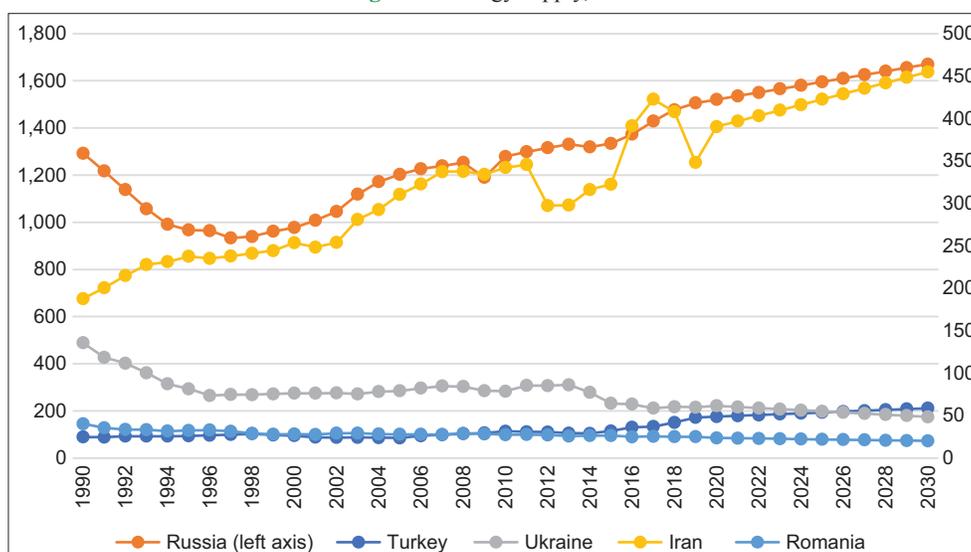
### 4.1. Russia + Iran

These two countries have the same goals in the region, which can be achieved by the following:

**Table 3: The matrix of regional goals**

Goal	Energy price	Green energy	Financial situation	Nuclear energy	Pipelines	Region stability	Attitude toward sanctions	Energy balance
Russia	High	NI*	NI	I*	I	I	NI	Surplus
Iran	High	NI	NI	I	I	I	NI	Surplus
Azerbaijan	High	I	NI	NI	I	I	NI	Surplus
Turkey	Low	I	NI	NI	I	I	NI	Deficit
Bulgaria	Low	I	I	NI	I	I	I	Deficit
Romania	Low	I	I	NI	I	I	I	Deficit
Ukraine	Low	I	I	NI	NI	I	I	Deficit
Moldova	Low	I	I	NI	NI	I	I	Deficit
EU	Low	I	I	NI	NI	I	I	Deficit
Georgia	Low	I	I	NI	NI	I	I	Deficit
BSTDB	Low	I	I	NI	NI	I	NI	–
EBRD	Low	I	I	NI	NI	I	I	–
BRI	Low	I	I	I	I	I	NI	–
China	Low	I	I	I	I	I	NI	Deficit
The US	High	NI	I	I	NI	NI	I	Surplus

\*I: Interested, NI: Not interested

**Figure 5: Energy supply, Mtoe**

Source: Created by the authors, based on (Enerdata, 2020)

- To raise prices, the two countries should actively participate in OPEC + initiatives (Pierru et al., 2018; Quint and Venditti, 2020) to reduce oil production. In addition, they should cooperate in energy transit (by diversifying the pipeline system in the region) and should remove Azerbaijan from the regional market, for example, provoking conflicts with its participation and dumping oil and gas prices. (Azerbaijan has high operating costs for oil wells [CESD, 2018]).
- The countries should sell oil and gas at lower prices in order to form the perception of “green energy” as expensive in the EU members of the region.
- The countries could promote the use of nuclear energy through BSTDB, if it worked efficiently.
- The countries could develop joint approaches to nuclear energy; however, cooperation with Iran in this area is risky, so Russia offers its assistance in the construction of nuclear power plants in Romania and Bulgaria (Larson, 2020).
- Both countries are interested in diversifying the infrastructure of regional pipelines. Shared and easier access to Blue

Stream, TurkStream and TANAP architectures could reduce countries’ midstream costs. The revival of the Nabucco project could activate Middle East exports, therefore, increase competition in the region, hence the current state is satisfactory for both countries. The more diverse pipeline architecture along the Brotherhood and Soyuz pipelines will benefit Russia.

- Like all other regional players, the countries should maintain stability in the region, avoiding conflicts. But in the post-Crimean crisis, stability in the region has been undermined, just like after the conflict over Nagorno-Karabakh in 2020. The only option is to accept the situation as it is and resolve these issues through international dialogue.
- Economic sanctions were introduced against both Russia and Iran. In this regard, economic cooperation through the FTA is the best option. The format should be transformed into a permanent one and should be expanded through a deeper partnership between the Eurasian Economic Union (EAEU) and Iran (Adarov and Ghodsi, 2020).

## 4.2. EU Countries + Ukraine + Moldova + Georgia + EU + EBRD

- Due to the deficit in the energy balance, these countries and institutions have to buy energy. To cut costs, these countries need to stimulate diversification of supplies, namely to make exceptions from the Third Energy Package for smaller exporters of hydrocarbons, such as Azerbaijan, and to lift sanctions on Iran. The initial sanctions imposed on Iran were initiated by the US, so EU countries only support the US in this measure. On the other hand, imports of shale hydrocarbons from the United States are a new way to diversify energy imports and create competition.
- Green energy is another opportunity for European countries and institutions to reduce energy costs (Guliev et al., 2020). To promote its development, they need to provide financial support to the less developed countries of the Union and the Black Sea region.
- Seeking financing for green energy requires methods of subsidizing. The authors propose a scheme to involve the EBRD in the process through the issuance of green bonds.
- Nuclear energy is practically banned in Europe, so no new measures are required.
- Transit countries such as Romania and Bulgaria are interested in building new pipelines, while other EU countries (except Germany) have interest in Nord Stream 2 (Loskot-Strachota, 2016; Sziklai et al., 2019) and do not see any profit from their construction. A general reluctance to invest in pipelines means that no new measures are needed. The transit countries do not have sufficient resources and political power to force pipeline construction, so they must create the best conditions for hydrocarbon exporters to encourage them to build pipelines on their territory.
- The countries are very interested in stability in the region, in this regard, military partnership with the United States (including NATO) does not correspond to their interests. The partnership format in a situation where the Warsaw Pact Organization does not fulfill its functions, the modern NATO format is an overkill.
- The ongoing sanctions against Russia should not be stricter, but the current regime helps the countries restrict Russian hydrocarbon exports in another way.

## 4.3. China + BRI

- Cheap energy for China is primarily provided by Russia, but in the context of creating BRI corridors across the Black Sea region (Guo and Fidan, 2018), it is important to build energy infrastructure in Central Asia. China has to invest more in the development of green energy in the region, in addition to this, it should stimulate the extension of the Trans-Caspian pipeline to the countries of Central Asia.
- Major financial resources should be provided under the BRI, primarily to the Central Asian countries; however, Georgia, Moldova, Romania and Bulgaria are potential partners of the BRI initiative in the energy sector. This will increase China's prestige in the political arena and stimulate the development of their energy sector, which will lead to a monopsony effect – China will be the only major market for Russian oil and gas, forcing the latter to agree to China-dictated prices.

- China should promote its nuclear technology in Asia and Africa to make it more attractive in Europe. Building nuclear power plants in India and other politically stable countries is the best way to do this.
- New pipelines in Central Asia should be financed by China through the BRI.
- Regional instability will negatively affect the BRI, therefore, China should seek to resolve conflicts in peaceful formats, supporting Russia in this area.
- China can do little to lift sanctions, but only actively trade with Russia, becoming its main partner and strengthening its political power through such an alliance.

## 4.4. The US

- The US is an exporter of shale hydrocarbons (Jirušek and Vlček, 2017), in this regard, the development of green energy should be reduced by promoting shale gas. Today, dumping prices should be introduced for it and the construction of terminals should be financed.
- Financial support should be provided to countries that adhere to shale oil and gas exported from the United States, as well as those, which develop nuclear power based on US nuclear technology. These instruments are the IMF credits (the US has the biggest share of votes in the World Bank Group).
- The transportation of shale hydrocarbons by sea is in the interests of the United States, so new sea terminals in Europe are built and the rejection of shale hydrocarbons will be very expensive for European countries.
- Regional instability in the Black Sea region will allow the United States to export more shale hydrocarbons and conquer the European energy market. In addition, Russia's power will be significantly undermined, and China will have to limit its ambitions to penetrate the BRI into Europe and Central Asia, two important regions for US policy (Rumer et al., 2016). To ensure this, the United States may support the Russian-Ukrainian conflict and stimulate new conflicts and political instability through soft power and hidden tools (DeVine, 2019; Uram, 2005).
- Sanctions serve the same reasons, namely, reducing the potential of oil and gas exporters and gaining their share in the energy market. Another reason is to increase pressure on Russia and Iran and win them economically.

## 5. CONCLUSION

The Black Sea region provides numerous opportunities for energy transit, but it includes countries and institutions with conflicting interests. The results obtained in the article confirm the following trends in the development of regional blocs headed by the major players: the EU countries will develop green energy, looking for new financial resources, and a cheaper option of hydrocarbons from Russia and Iran will be gradually replaced by US shale gas; Russia will seek the presumption of its position in the European energy market and build new pipelines, form an alliance with Iran and act together in the energy market. China will promote green energy through the BRI, while the US pursues its own goals and is highly likely to destabilize the Black Sea region. New interstate alliances are highly likely, especially between hydrocarbon exporters.

The assumption about the existence of a single strategy most suitable for all countries of the Black Sea region turned out to be false, since the countries form blocs and interest groups in the region and these interests are contradictory, with the exception of one and only common one – stability in the Black Sea region.

The hypothesis of the institutional principle of the distribution of countries by interests also proved to be false, as the countries from different regions share the same interests, the only region, where the hypothesis proved to be correct is the European group of countries.

The new energy trends apply not only to the Black Sea region, but also to a wider group of countries. The overall growing demand for green energy and falling energy consumption in European economies, along with the emergence of technologies that allow to extract more hydrocarbons in a shorter period of time, inevitably lead to increased competition in the energy market and the formation of monopsony in regional energy markets. This will lead to lower prices for hydrocarbons.

## REFERENCES

- Adarov, A., Ghodsi, M. (2020), The Impact of the EAEU-Iran Preferential Trade Agreement, Working Paper No. 179. Vienna: The Vienna Institute for International Economic Studies.
- Alekseev, A.N., Bogoviz, A.V., Goncharenko, L.P., Sybachin, S.A. (2019), A critical review of Russia's energy strategy in the period until 2035. *International Journal of Energy Economics and Policy*, 9(6), 95-102.
- Bros, A. (2015), There Will be Gas: Gazprom's Transport Strategy in Europe, *Russie.Nei.Reports* No. 21. Paris, France: Institut Francais des Relations Internationales.
- CESD. (2018), How Much Does Azerbaijan Really Earn from Higher Oil Prices? Center for Economic and Social Development.
- Chaziza, M. (2020), The impact of U.S. sanctions on Iran's engagement and integration in the Belt and Road Initiative. *Digest of Middle East Studies*, 29(2), 167-182.
- Cîrstea, Ș., Martiș, C., Cîrstea, A., Constantinescu-Dobra, A., Fülöp, M. (2018), Current situation and future perspectives of the Romanian renewable energy. *Energies*, 11(12), 3289.
- DeVine, M.E. (2019), Covert Action and Clandestine Activities of the Intelligence Community: Selected Definitions in Brief No. R45175, Congressional Research Service.
- Donnelly, G. (2020), The Black Sea Region in a Future U.S. Grand Strategy. Middle East Institute. Available from: <https://www.mei.edu/publications/black-sea-region-future-us-grand-strategy>. [Last accessed on 2020 Dec 20].
- EBRD. (2020), The EBRD in Moldova, European Bank for Reconstruction and Development. Available from: <https://www.ebrd.com/moldova.html>. [Last accessed on 2020 Dec 20].
- Enerdata. (2020), Global Energy Statistical Yearbook 2020. Available from: <https://www.yearbook.enerdata.net>. [last accessed on 2020 Dec 20].
- European Commission. (2020), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Sustainable Europe Investment Plan, European Green Deal Investment Plan, COM (2020) 21 Final.
- Falkowski, K. (2018), The importance of energy resources for Azerbaijan's international competitiveness. *Journal of International Studies*, 11(4), 44-56.
- Fedchenko, V., Anthony, I. (2018), Nuclear Security in the Black Sea Region: Contested Spaces, National Capacities and Multinational Potential. Stockholm: SIPRI.
- Franza, L. (2015), From South Stream to Turk Stream, CIEP Energy Papers No. 2015/05. The Hague: Clingendael International Energy Programme.
- Garding, S.E., Ratner, M., Welt, C., Zanotti, J. (2020), TurkStream: Russia's Newest Gas Pipeline to Europe No. IF11177, Congressional Research Service.
- Global Firepower. (2020), Global Firepower Nations Index 2020. Available from: <https://www.globalfirepower.com/countries.asp>. [Last accessed on 2020 Dec 20].
- Górka, M. (2018), The three seas initiative as a political challenge for the countries of Central and Eastern Europe. *Politics in Central Europe*, 14(3), 55-73.
- Guliev, I.A., Geladze, S.A., Sokolova, E.S., Egorova, L.I. (2020), The prospects of conventional and alternative energy production in the countries of the Balkan Peninsula (in the context of developing economic indicators). *International Journal of Energy Economics and Policy*, 10(1), 481-487.
- Guo, X., Fidan, G. (2018), China's Belt and Road Initiative (BRI) and Turkey's Middle Corridor: Win-Win Cooperation? Washington DC: Middle East Institute.
- Hamilton, D.S., Mangott, G., editors. (2008), The Wider Black Sea Region in the 21<sup>st</sup> Century: Strategic, Economic and Energy Perspectives. Washington, DC, Vienna: Center for Transatlantic Relations.
- Hess, M. (2020), The Realist Victory in Nagorno-Karabakh, Foreign Policy Research Institute. Available from: <https://www.fpri.org/article/2020/11/the-realist-victory-in-nagorno-karabakh>. [Last accessed on 2020 Dec 20].
- IEA. (2020), Data and Statistics: Balances. Available from: <https://www.iea.org/data-and-statistics/data-tables?country=russia&energy=balances&year=2018>. [Last accessed on 2020 Dec 20].
- Ivan, R. (2016), New Regionalism or No Regionalism? Emerging Regionalism in the Black Sea Area. London: Routledge.
- Ivanov, M.J. (2014), Renewable energy industry in Bulgaria: Challenges to its development. *Sociological Problems*, 46, 151-171.
- Jirušek, M., Vlček, T. (2017), Global impact of energy exports from the USA: Assessment of potential consequences for targeted markets. *International Journal of Global Energy Issues*, 40(3/4), 207-224.
- Jishkariani, M. (2019), Electricity tariffs in Georgia. *World Science*, 9(49), 20-22.
- Karami, J., Rasoulnezhad, E., Shokri, S.A. (2019), Discussion on Russia-Iran bilateral trade in the modern Era with emphasis on Russia's economy. *World Sociopolitical Studies*, 3(1), 161-198.
- Konoplyanik, A.A. (2011), Russia and the third EU energy package: Regulatory changes for internal EU energy markets in gas and possible consequences for suppliers (including non-EU suppliers) and consumers. *International Energy Law Review*, 8, 24-40.
- Kytaiev, A., Chala, N., Androsov, Y. (2020), Failures of energy policy in Ukraine in the context of energy security priorities. *Polityka Energetyczna-Energy Policy Journal*, 23(3), 111-124.
- Larson, A. (2020), Three Big Players Work Together on Bulgarian Nuclear Plant. Available from: <https://www.powermag.com/three-big-players-work-together-on-bulgarian-nuclear-plant>. [Last accessed on 2020 Dec 20].
- Levi, M. (2012), A Strategy for U.S. Natural Gas Exports, Discussion Paper No. 2012-04, Brookings. Available from: [https://www.ourenergypolicy.org/wp-content/uploads/2012/06/06\\_exports\\_levi.pdf](https://www.ourenergypolicy.org/wp-content/uploads/2012/06/06_exports_levi.pdf). [Last accessed on 2020 Dec 20].
- Loskot-Strachota, A. (2016), Nord Stream 2: Policy Dilemmas and the Future of EU Gas Market, Policy Brief No. 2/2016. Oslo: Norwegian Institute of International Affairs. Available from: <https://www.files>

- ethz.ch/isn/196112/nupi\_policy\_brief\_2\_loskot\_strachota.pdf. [Last accessed on 2020 Dec 20].
- MacGillivray, I.W. (2020), The paradox of Turkish-Iranian relations in the Syrian Crisis. *Third World Quarterly*, 41(6), 1046-1066.
- Nitzov, B., Stefanov, R., Nikolova, V., Hristov, D. (2010), *The Energy Sector of Bulgaria*. Washington, DC: Atlantic Council, Center for the Study of Democracy.
- Özarsu, M.F. (2019), A pragmatic policy case: US-Azerbaijan relations. *MANAS Sosyal Araştırmalar Dergisi*, 8(3), 3046-3063.
- Pachiu, L., Scutaru, G. (2020), Energy and the Battle for the Black Sea. Available from: <https://www.warsawinstitute.review/issue-2020/energy-and-the-battle-for-the-black-sea>. [Last accessed on 2020 Dec 20].
- Paul, H. (2009), *Nitze School of Advanced International Studies*. Maryland: Johns Hopkins University, Austrian Institute for International Affairs. Austrian Marshall Plan Foundation.
- Paun, D. (2017), Sustainability and financial performance of companies in the energy sector in Romania. *Sustainability*, 9(10), 1722.
- Pierru, A., Smith, J.L., Zamrik, T. (2018), OPEC's Impact on Oil Price Volatility: The Role of Spare Capacity. *The Energy Journal*, 39(2), 30-40.
- Pociovalisteanu, D.M., Thalassinou, E., Tirca, A., Filho, W.L. (2010), Trends and challenges in the energy sector of Romania in the post-accession to the European Union. *International Journal of Environmental Technology and Management*, 12(1), 3-11.
- Poiana, O. (2015), Regional cooperation and national preferences in the Black Sea region: A zero-sum game perpetuated by energy insecurity? In: Nodia, G., Stefes, C.H., editors. *Security, Democracy and Development in the Southern Caucasus and the Black Sea Region*. Bern: Peter Lang AG, Internationaler Verlag der Wissenschaften. p307-332.
- Quint, D., Venditti, F. (2020), *The Influence of OPEC+ on Oil Prices: A Quantitative Assessment*, No. 2647. Frankfurt am Main: European Central Bank.
- Rumer, E., Sokolsky, R., Stronski, P. (2016), *US Policy Toward Central Asia 3.0*. Carnegie Endowment for International Peace.
- Sarica, K., Tyner, W. (2016), Economic impacts of increased US exports of natural gas: An energy system perspective. *Energies*, 9(6), 401.
- Sashi, S., Bhavish, S. (2019), Macroeconomic implications of US sanctions on Iran: A sectoral financial balances analysis. *Studies in Business and Economics*, 14(3), 182-204.
- Sautin, Y. (2018), *China's Black Sea Ambitions*, Foreign Policy Research Institute. Available from: <https://www.fpri.org/wp-content/uploads/2018/12/bssp4-sautin.pdf>. [Last accessed on 2020 Dec 20].
- Sauvageot, E.P. (2020), Between Russia as producer and Ukraine as a transit country: EU dilemma of interdependence and energy security. *Energy Policy*, 145, 111699.
- Sharyi, V.I., Samoilenko, L.Y., Ovcharenko, A.O. (2019), Strategic priorities of states in the black sea region. *Journal of Advanced Research in Law and Economics*, 10(6), 1786-1793.
- Stet, M. (2017), Characteristics of the Romanian energy market. *IOP Conference Series: Materials Science and Engineering*, 200, 012067.
- Sziklai, B., Koczy, L.A., Cserecsik, D. (2019), The geopolitical impact of Nord stream 2. *SSRN Electronic Journal*, 13, 23.
- Uram, D.A. (2005), *Covert Action: A Useful Tool for United States Foreign Policy?* Master's Thesis, University of Victoria, University of Victoria. Available from: [https://www.dspace.library.uvic.ca/bitstream/handle/1828/781/uram\\_2005.pdf?sequence=1&isallowed=y](https://www.dspace.library.uvic.ca/bitstream/handle/1828/781/uram_2005.pdf?sequence=1&isallowed=y). [Last accessed on 2020 Dec 20].
- van der Putten, F.P. (2017), *The Balkans and Black Sea Region and China's New Silk Road*. Netherlands: Clingendael Institute.
- Vespremeanu, E., Golumbeanu, M. (2018), International cooperation in the black sea basin. In: *Springer Geography. The Black Sea*. Cham: Springer International Publishing. p125-133.
- Vidadili, N., Suleymanov, E., Bulut, C., Mahmudlu, C. (2017), Transition to renewable energy and sustainable energy development in Azerbaijan. *Renewable and Sustainable Energy Reviews*, 80, 1153-1161.
- Vilcu, I., Timu, A. (2019), Here's Why Romanian Politics Are Blowing Up Yet Again. Available from: <https://www.bloomberg.com/news/articles/2019-09-04/here-s-why-romanian-politics-is-blowing-up-yet-again-quicktake>. [Last accessed on 2020 Dec 20].
- Wege, S. (2015), The black sea region as a strategic energy corridor: International dynamics of cooperation and competition. In: Nodia, G., Stefes, C.H., editors. *Security, Democracy and Development in the Southern Caucasus and the Black Sea Region*. Bern: Peter Lang AG, Internationaler Verlag der Wissenschaften. p289-305.
- Weitz, R. (2020), *China and the Black Sea Region: A Bridge Too Far?* Middle East Institute. Available from: <https://www.mei.edu/publications/china-and-black-sea-region-bridge-too-far>. [Last accessed on 2020 Dec 20].
- Winrow, G. (2007), Geopolitics and energy security in the wider black sea region. *Southeast European and Black Sea Studies*, 7(2), 217-235.
- World Experience for Georgia. (2008), *Energy Efficiency Potential in Georgia and Policy Options for Its Utilization*. Available from: [http://www.weg.ge/sites/default/files/energy\\_efficiency1.pdf](http://www.weg.ge/sites/default/files/energy_efficiency1.pdf). [Last accessed on 2020 Dec 20].
- Yellinek, R. (2020), *Opinion-The Impact of China's Belt and Road Initiative on Central Asia and the South Caucasus*, E-International Relations. Available from: <https://www.e-ir.info/2020/02/14/opinion-the-impact-of-chinas-belt-and-road-initiative-on-central-asia-and-the-south-caucasus>. [Last accessed on 2020 Dec 20].
- Yıldırım, Z. (2012), US foreign policy towards Azerbaijan: From Alliance to Strategic Partnership. *Alternatives: Turkish Journal of International Relations*, 11(4), 1-15.
- Yilmaz-Bozkus, R. (2019), Turkey's relations and energy cooperation with the BSEC. *Insight Turkey*, 21(3), 177-194.
- Zadnıpru, R. (2011), *Energy policy of Republic of Moldova*. Available from: <https://www.eneken.ieej.or.jp/data/3923.pdf>. [Last accessed on 2020 Dec 20].