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To cite this article: S I Azakov 2018 IOP Conf. Ser.: Mater. Sci. Eng. 459 012011

View the article online for updates and enhancements.
Contribution of Azerbaijan to the energy security of the European Union

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Abstract. Despite all progress connected with use of renewable energy sources it is widely known that fossil fuels will remain dominating in short- and medium-term prospects. Presently fossil fuels are made more, than three quarters of a global power mix, and in the next decade the level of their use will probably be the same. Among them there are crude oil and natural gas as widely used and globally sold energy resources which reserves unevenly distributed, are responsible to a large extent for energy security in the world. Therefore the relations between the European Union, one of the largest oil and gas consumers, and Azerbaijan, the supplier of energy whose location isn't really far from the EU attract special attention of many politicians and creators of public opinion in Europe. The Southern Gas Corridor which ceremony of start of the first stage was held on May 29, 1918 in Baku is one of priority projects for the EU, and provides transportation of 10 billion cubic meters of the Azerbaijani gas from the Caspian region through Georgia and Turkey to Europe by 2020 will be the first real diversification of gas coming in from the East. At an initial stage, the gas extracted within the second phase of development of the Azerbaijani gas-condensate field "Shah Deniz" is considered as the main source for the corridor. At later stage other sources can be attracted to the project. Gas within the second stage of Shah Deniz field will be exported to Turkey and to the European markets by expansion of the South Caucasian gas pipeline and construction of Trans-Anatolian (TANAP) and Trans-Adriatic (TAP) pipelines. The project involves two EU member states, Italy and Greece, candidate countries, Turkey and Albania, and Azerbaijan, the EU strategic partner in energy. Four different types of countries were involved: member states, candidate countries, associated partners and future strategic partners. The EU supported Southern Gas Corridor is directed to curtail Russian energy leverage over Eastern and Southeastern European countries which are heavily reliant on Russian gas deliveries. It opens up the direct access for the land-locked Caspian states, primarily Turkmenistan and Kazakhstan, to the European gas markets. This article describes development of the energy relations of the EU and the Republic of Azerbaijan. The energy needs and potential of these two partners are investigated and their main interests are defined. The main problems, opportunities and obstacles for power cooperation of the EU and Azerbaijan are discussed, and views of development of their principles of energy policy in the near future are considered.
1. Introduction

Unsecured by a sufficient amount of energy resources, the European Union (EU) countries are forced to look for sources of their imports and establish relations with supplier countries. This is manifested not only in the framework of economic cooperation, but also becomes the basis for a political dialogue with partners.

The issue of energy security in Europe became especially acute after the first gas crisis in relations between Russia and Ukraine in 2006. Although before that, European politicians believed that in the event of a conflict between states and supply disruptions, the EU countries might suffer, but after these events the issue of energy security has acquired political significance, becoming "special." The EU identified the problem of dependence on Russia as a challenge, seeking to diversify energy sources and liberalize the gas market.

The main problem of energy security in European countries, as the European Commission (EC) stresses, is the EU's dependence on energy imports. More specifically, the EU's dependence on energy imports from Russia, while the EC views Russia as a country that tends to use its energy resources as a political tool.

After the gas crises of 2006 and 2009, much has been done to strengthen energy security, but the EU still feels vulnerable. In 2014, the EU adopted the Energy Security Strategy [1], aimed, in particular, at reducing dependence on "certain types of fuel, suppliers and routes." The main tasks to be fulfilled in order to achieve the goal set in the document are to increase domestic production capacities, enhance energy efficiency, develop renewable energy sources (RES), and diversify suppliers and infrastructure.

The development of renewable energy is particularly relevant in the context of the dominance of the trend to reduce the use of nuclear power after the accident at the Japanese nuclear power plant Fukushima-1, and also because of the impossibility of using large volumes of coal, as this contradicts the decarbonization policy that became actual after the entry into force of the Paris Agreement on climate in 2016.

The share of renewable energy in the energy mix of Europe is indeed growing and the EU's success in this is undeniable, but they still cannot completely replace traditional energy resources, which is the main problem of non-traditional energy.

Another way to reduce dependence on Russia, the EU sees in diversification of gas suppliers, both on new pipelines and liquefied gas.

As for such gas pipelines, the most attractive and economically profitable for Europe would be a gas pipeline from the Caspian region (Azerbaijan, Turkmenistan, Kazakhstan, Uzbekistan and Iran) rich in hydrocarbon resources.

As for liquefied natural gas (LNG), Europe primarily relies on LNG imports from the US. The EU actually received the first LNG shipments in 2016, but gas volumes are still insignificant.

In addition, Europe expected that Qatar will increase exports to the EU. By 2020, Qatar plans to increase the volume of produced gas by 20 billion cubic meters per year. However, gas consumption is increasing in Pakistan, the UAE, and also in Qatar itself. Therefore, even if production volumes really increase, this does not mean that they will all go to the European market.

In addition to the United States and Qatar, the EU viewed the countries of North Africa as a tool to reduce dependence on Russia. It is obvious that from Libya, where the war goes for years, gas will not be supplied in significant volumes. The lack of investment in the gas industry of Algeria also in the short term will not allow a serious increase in the extraction and export of "blue fuel". In addition, the growing demand for gas within the country itself also plays a role. According to forecasts, it will exceed the increase in production up to 2040. Hopes for gas supplies from Egypt also did not materialize, because domestic consumption increased in the country.
The EU makes maximum efforts and takes various measures to ensure energy security, but it faces a number of problems, primarily the lack of a coordinated energy policy within the EU. The replacement of Russian gas with alternative energy is also not yet realized. American LNG due to high prices in comparison with Russian gas and still insufficient volumes is not able to displace Russian gas from the European market. Algeria, Qatar, Iran, Libya and Egypt for a number of reasons cannot become reliable suppliers of gas for the EU.

2. What is energy security and why is it so important for any country?

The term "energy security" emerged in the 1970s when a number of oil-producing countries of the Middle East imposed an embargo on the supply of oil to Europe during the escalation of the Arab-Israeli conflict, and as a result, its price increased threefold.

In modern terminology, energy security in the broad sense means a balance between the demand and the supply of energy raw materials. It is the belief that energy will be available in the quantity and quality that are required under given economic conditions.

At the same time, the adequacy of the supply of fuel and energy resources and moderation of their demand are taken into account. And all this happens with the depletion of relatively cheap fossil fuels in most regions of the world, the need to develop their more expensive reserves, on the one hand, and a significant increase in the world economy's demand for primary energy resources (faster in developing countries), on the other.

The complexity, scale and depth of the energy problems of the modern world put energy security in the list of the most important components of national security.

In order to ensure energy security, a specific policy of the state and the implementation of special measures are required: joint use of all regulatory mechanisms is necessary. Energy security is the security of supply and the reliability of transit, control over pipelines, the rejection of energy blackmail, the avoidance of sharp jumps in prices, and so on.

Energy security is associated with the energy independence of the state, its subject or its region; it is in the first place, a political problem. The sustainable development and stability of energy producing states (Azerbaijan among them) is of great importance for ensuring economic energy security. Such stability may be under threat in connection with the need to conduct exploration and production of energy resources in increasingly difficult conditions, which is possible only with the use of ultra-modern technologies, causing damage to the environment and entailing difficulties in transportation.

Energy security can be defined as:

- the energy independence of the state;
- a characteristic of the country's heat and power complex;
- a state of security of civilians, society and the state against the threat of deficit of energy and fuel and resources;
- a state of society and economy, which allows to maintain the necessary level of energy consumption;
- a set of conditions for which there is no energy deficit;
- a means of economic and political influence, etc.

Today, the problem of energy security acquires a special relevance, which is due, on the one hand, to the depletion of proven reserves of natural energy resources, and on the other, to a constant increase in fuel consumption and various types of energy.

The EU which includes the most developed economies of the world is one of the leading consumers of energy resources. Its lucrative market remains attractive to many energy exporters, especially those who
depend on energy-born revenues. In 2015 the EU consumed 1 629.5mln t of oil equivalent, which makes up 11.9% of the global energy mix [2].

For the EU, the issue of energy security is one of the most important ones because it has very limited access to oil and gas reserves, has to secure large energy supplies from different sources at reasonable and stable prices in order to sustain economic performance and growth.

The issue of energy security is also quite acute for Azerbaijan. This is due to the resource orientation of the country's economy, which naturally requires minimizing various kinds of political, economic, military and technological risks in the sale, transit and delivery of oil and gas to the consumer.

For Azerbaijan, intensification of energy contacts with the EU gives an opportunity not only to get hard currency, but also modernize its economy.

3. Why natural gas is best as a fuel and a source of energy used today (although there are other energy sources used: coal, oil, hydro, renewable energy sources)?

Currently, natural gas is considered as one of the main types of fuel, after oil products. Its main "plus" is that this substance can be called almost environmentally friendly. Natural gas is up to 50 percent cleaner than other fossil fuels [3]. Compared to average emissions from coal-fired power plants, natural gas produced less than a third as much nitrogen oxides and 1 percent as much sulphur oxide [4].

Compared to production of energy or heat from coal or oil, natural gas does not only reduce greenhouse gas emissions – it hugely improves air quality, reducing smog and dangerous particulate matter with very real benefits for human health [5].

Nowadays it is very important, especially when the problem of ecology and pollution of the environment is very actual. For heating and cooking, gas is used much more often than solid fuels and all because its combustion does not form smoke and does not leave ash behind.

Basically, the fossil gas consists of gaseous methane. It also includes such gases as propane, ethane and butane. The concentration and amount of all these substances in the formula of natural gas depend on the place of its extraction.

Today the market of gas fuel is very wide. A lot of countries in the world appreciated the advantages of using "blue" fuel. It is used not only as fuel; it is used in household and chemical industry. In addition, during combustion, gas produces virtually no harmful substances, so its advantages, compared to other types of fuel, are significant. Gas is much easier to ignite and it is more convenient to control the combustion process, for example, with coal and other solid fuels, this is more difficult to do.

Modern life of a person is very difficult to imagine without the use of natural gas. Due to its environmentally friendly composition, as a source of energy, gas is used much more often than other substances. Rich deposits allow us to use these minerals for a long time.

While the advanced countries of the world are developing all new ways of obtaining "clean energy", most of the world still consumes such energy sources as firewood, coal and oil. Even in developed countries, coal still retains its positions.

Therefore, on a global scale, the transition to gas fuel is considered a major step forward due to its energy efficiency and environmental purity.

The International Energy Agency (IEA) predicts that by 2040 the demand for energy resources in the world will grow by 30% [6].

Gas is one of the few types of energy that can be used in all sectors of the economy, be it transport, housing or manufacturing. The world's gas reserves are huge and located in many regions.

The IEA estimates that technically recoverable natural gas reserves in the world will last at least 220 years at the current production level [7].
Natural gas will continue to increase its share in the global energy mix, growing at 2 percent a year until 2020 [8].

It has an important role to play in decarbonisation of Europe’s energy systems - countries such as Canada have successfully reduced overall greenhouse gas emissions [9] while increasing energy use, through inclusion of more natural gas in their energy mix.

4. How much natural gas does the European Union produce and consume?
The EU possesses less than one per cent of global crude oil and natural gas proven reserves. The discovery of the hydrocarbon offshore fields under the North Sea in the 1970s has led to the development of gas markets in the United Kingdom, Netherlands and Denmark. These countries are still the most important EU producers; however, their reserves are expected to be finished soon. Except for the recent discoveries of offshore fields in Cyprus, the other EU member states have a very narrow gas production base.

Own gas production in the EU is steadily falling by an average of 3% per year and in 2017 amounted to 128 bcm [10].

Reduction of production in the Dutch Groningen by 10% and the closure of the largest gas storage Rough in the UK put serious pressure on the market and lead to price volatility. There is depletion of gas deposits in the North Sea.

And, despite the fact that Norway is currently at the peak of production, its reserves of reserves are only 1900 bcm. Obviously, with the level of today’s production, which is about 120 bcm per year, Norwegian resources are rapidly depleted, or production will begin to decline and, therefore, exports.

5. How much gas does Europe import, in what form and from what sources? What is the forecast for imports in the future until 2035?
The import of natural gas by the EU countries in 2017 amounted to about 360 bcm. Russia retains leadership in supplying gas to Europe. So, in 2017, Russia delivered to the European market 194.4 bcm of gas, and the US - less than 2 million tons of LNG (about 3 bcm). Now the market share of Gazprom in Europe is about 35%, the share of American LNG is less than 1%.

Last several years the EU imported about 350-400 bcm per year. Russia remains the EU main supplier of natural gas, providing 30-40% of all Union imports (in 2012: 25%). According to Brussels, the EU’s overall demand projected for 2030 will remain more or less the same as today, and will amount to 380-450 bcm per year [11].

To ensure reliable gas supply, Gazprom, Wintershall, E.ON, Gasunie and GDF Suez (now “Engie”) have built the Nord Stream pipeline, with a capacity of up to 55 bcm per year.

Norway with 33% share is in the second place among the exporters of gas to the EU. This year, the Norwegian Petroleum Directorate forecasts production in the country at 114.5 bcm, which is 2% less than in 2016.

Deliveries of pipeline gas from Algeria declined in the second quarter of 2017 by 27% after two years of growth. The import of Algerian gas to Italy fell by about 32%.

Along with the supply of natural gas through pipelines, from 2015 LNG shipments by tankers also play an important role. The main suppliers of LNG to Europe are Qatar, Nigeria and Algeria. However, the US also began to supply LNG to Europe.

Currently, LNG supplies to the EU countries are declining due to higher prices for natural gas in the markets of Asia or South America.

In the future, first of all, Great Britain, France, Spain and Italy will increase the import of LNG.
6. Gas Potential of Azerbaijan

The main volumes of gaseous fuel of Azerbaijan are concentrated in the giant gas-gas condensate field "Shah Deniz". Located in the southern part of the Caspian Sea, 70 km to the south-east of Baku (in water depths ranging from 50 to 500 m), the hydrocarbon structure of Shah Deniz was discovered by Azerbaijani geologists in 1954.

After Azerbaijan gained independence, it was decided to attract foreign investors to its development. The contract for the Shah Deniz field was signed in Baku on June 4, 1996 and ratified by the Milli Mejlis (Azerbaijani Parliament) on October 17, 1996.

The contract for its development was the second after the contract for the development of the Azeri-Chirag-Guneshli (ACG) oil field, which is large in terms of financing and politically important PSA signed by the government of the country with foreign enterprises (valid from 1996 to 2031).

In 1997, three-dimensional geophysical studies were carried out on the structure. Then for 18 months and 145 million US dollars, paid by the project participants, the floating semi-submersible drilling rig "Shelf-5" was upgraded, later renamed into "Istiglal", which started drilling on the contract area.

In 1999, the first well SDX-1 was drilled in the contract area. As a result, the largest gas condensate field with carbon stocks estimated at a first approximation of 1 trillion tons of oil equivalent was found on Shah Deniz (1.7 trillion cubic meters of natural gas and 400 million cubic meters of gas condensate).

In April 2000, the 2nd SDX-2 well was drilled, which clarified the hydrocarbon potential of Shah Deniz. In 2001 SDX-3 was drilled, which turned out to be empty, but allowed to clarify the contours of the field.

At present, the structure of the group's capital developing the Shah Deniz field is as follows: the British BP (28.8% operator), AzSD (10.0%), SGC Upstream (6.7%) (subsidiaries of SOCAR), the Malaysian Petronas (15.5%), the Russian LUCOIL (10.0%), the Iranian NICO (10.0%), the Turkish TPAO (19.0%).

Development of the Shah Deniz field reserves is carried out in three stages. At the first stage (Shah Deniz-1), a sea platform was built, with which it was planned to drill 15 wells in the course of the work, with a deviation from the vertical. Industrial production of hydrocarbons began in 2006. Within the first stage of development, i.e., until 2031, it is planned to extract 178 billion cubic meters (bcm) of gas and 34 million tons of gas condensate [12].

In 2010 - 2016 years gas production in Azerbaijan increased by more than 50% on average over the year and was characterized by the following indicators (in bcm): 2010 - 6.9, 2011 - 6.67, 2012 - 7, 73, 2013 - 9.8, 2014 - 9.9, 2015 - 9.9, 2016 - 10.7. In the future, before the implementation of the second stage of development of the field (Shah Deniz-2), the concern intends to keep production at the level of at least 9 bcm per year to ensure production and export plans.

In 2017, about 10.2 bcm of gas were produced from the Shah Deniz field. The maximum capacity of the mining system reached 29.5 million cubic meters (mcm) per day. As of the end of January 2018 about 88.5 bcm of gas and about 22 million tons of condensate were produced from the Shah Deniz field.

Under the project, the Sangachal terminal, which is located about 45 km south of Baku, forms the central point for the collection, processing and export of all gas produced at the Shah Deniz field, in addition to the oil produced at the ACG. In the period of maximum production, the total throughput of the terminal is expected to be about 1 million barrels of oil and more than 28.3 mcm of gas per day.

To transport gas from Shah Deniz to Turkey in 2005-2006, the South Caucasus Pipeline (SCP) was laid with a length of 690 km, between the Sangachal terminal and the Turkish Erzurum. The project cost of all works on the Baku-Tbilisi-Erzurum route was about one billion dollars.

The maximum capacity of the pipeline is 20 bcm gas per year. After carrying out all the works in December 2006, the first gas from the Shah Deniz field was obtained. In July 2007, gas reached the territory of Turkey.
With an optimistic scenario, the maintenance of production at the level of 9 billion cubic meters per year is possible in the period until 2021-2022.

In the second stage (Shah Deniz-2, cost $ 28 billion), it is planned to implement a set of measures for the construction of two offshore platforms that support the drilling of 26 subsea wells, the expansion of the offshore pipeline network and the capacity of the Sangachal terminal.

It is assumed that within the framework of Shah Deniz -2, by 2020, gas production will increase to 16 bcm a year, of which 10 bcm will be exported to the EU, 6 bcm to Turkey. The specified volume of production is planned to be kept for about 10 years - until 2028-2030 [13].

In order to preserve the competitiveness of the national gas sector in the long term, the government of Azerbaijan and the participants of the relevant concern, headed by BP, are considering the possibility of developing and implementing the third stage of development of this structure (Shah Deniz-3). By 2020, the decision will be made. Currently, the results of seismic survey conducted using the 3D technique are being studied. Based on the results of this analysis, it will be decided whether to conduct exploratory drilling.

Thus, in the next eight years in Azerbaijan, with an optimistic development of events, average annual gas production can increase to 34-35 billion cubic meters. In the second half of the next decade, this indicator is seen to decrease by 5-10% per year.

Almost all of the gas that will be produced in the second stage of development of Shah Deniz is contracted for deliveries to the countries of the EU.

In the country, gas production is also carried out on the block ACG and some small structures. At the ACG, part of the extracted gas is pumped back into the reservoir to maintain working pressure, the rest of the fuel is sent to the Azerbaijani side on a no-cost basis. Until 2030, it is possible to organize the production of gaseous fuels in the deep water areas of ACG. According to some information, gas deposits there may amount to 200-300 billion cubic meters.

The production of gaseous fuels is associated with the implementation of costly measures to permanently stabilize recovery volumes due to the geological features of the Caspian offshore fields. An important task of the government of Azerbaijan and the consortium Azerbaijan International Operating Company (AIOC) is to keep average annual production at the level of 8.5-9 bcm of gas in the period until 2019-2020, i.e. before the commencement of commercial fuel production in the second phase of works (Shah Deniz-2) in order to ensure the export and domestic needs of the country.

In addition to the main Shah Deniz gas-gas-condensate field, Azerbaijan also has other gas deposits in the Caspian.

One recent discovery, announced in 2010, is the Umid gas field in the south Caspian Sea, estimated to contain 200 bcm of gas and 40 million tons of condensate; the country’s state energy company, SOCAR, has been producing gas there since 2012, and has recently finished drilling the third well. Also of great promise is the adjacent Babak field, yet to be developed, with potential gas reserves of 400 bcm, plus 80 million tons of condensate. Further off the coast, the Shafag-Asiman field holds an additional 300 bcm of gas, which Azerbaijan plans to extract in an equal-share partnership with BP. (This field may contain oil too, according to a seismic survey.) And another offshore deposit, Nakhichevan, is being jointly explored with the German company RWE.

The difference-maker for Azerbaijan’s ambitions as a gas exporter is the Absheron field, discovered in 2011. This field’s development, currently in its first phase, could greatly boost potential supplies (its reserves are estimated at 350 bcm of gas and 45 million tons of condensate).

Certain gas deposits are located on the southern shelf sites located in disputed areas, which are very likely to pass to Azerbaijan after the delimitation of the marine area.

All in all, according to SOCAR’s strategy document, these steps could expand Azerbaijan’s gas export volumes to a massive 40 bcm per year.
7. The Southern Gas Corridor project

In order to ensure its energy security the EU adapted a diversification strategy which was laid down in the 2008 Second Strategic Energy Review of the EC [14]. It envisions opening up a Southern Gas Corridor (SGC); with the Shah Deniz gas field is in the forefront.

The history of SGC started, it can be said, in 2006 with the beginning of the development of the Shah Deniz field by Azerbaijan.

In 2004, the EC launched the Baku Initiative, a policy discussion with Caspian states. In 2006, an EC energy policy document foresaw Black Sea and Caspian countries working with the EU to “boost new [energy] supplies from central Asia to the EU and further projects from the Caspian basin” [15]. In 2011, a detailed communiqué on external energy policy described the SGC as a “key infrastructure priority” and “a supply route for roughly 10-20 per cent of the EU estimated gas demand by 2020” [16].

In 2013, a consortium of companies developing the Shah Deniz -2 field finally approved the route of the SGC. The project eventually included the already existing South Caucasus pipeline (Baku-Tbilisi-Erzurum) and the new ones – Trans-Anatolian (TANAP) and Trans Adriatic (TAP). In the same year, the EC for 25 years withdrew the TAP from the action of the Third Energy Package, which required providing the capacity of the pipeline to third suppliers.

The foundation of the gas pipeline was laid in 2015 by the presidents of Turkey, Azerbaijan and Georgia, and the construction work itself began in 2016. The gas corridor will stretch almost 3.5 thousand kilometers from Baku to the south of Italy through Georgia, Turkey, Greece and Albania and will be used for transportation of "blue fuel" from Azerbaijan to the Balkans and the Apennines. In this regard, the project plans to install interconnectors (two-way highways) that connect to South Caucasus, which will in particular allow gas to be supplied to Bulgaria.

According to the SGC 16 billion cubic meters of gas per year should be transported. Of these, 6 billion are due to Turkey, the remaining 10 billion will go further, to Southern Europe. According to preliminary calculations, 8 billion cubic meters per year will be exported to Italy; 1 billion will be received by Greece and Bulgaria.

Figure 1. Southern Gas Corridor
The costs for the implementation of the SGC project are periodically reassessed. To date (August 2018), the SGC project is estimated at about $45 billion. Azerbaijan’s investment contribution to the SGC is estimated by experts at about $10.5 billion. This amount was calculated on the basis of the addition of shares of SOCAR in various constituent parts of the SGC.

SOCAR owns 16.7% of Shah Deniz-2 gas field, the raw material base of the future pipeline, 58% in TANAP and 20% in TAP gas pipelines. The total amount of investments in the development of the second stage of Shah Deniz (together with the expansion of the South Caucasus pipeline Baku-Tbilisi-Erzurum is $23 billion, the cost of TANAP is estimated at $9.3 billion, TAP -$6 billion

Not everything, of course, went smoothly, but the Azerbaijani project was necessary for Europe and after all the changes in November 2017, the EC approved an updated list of "Projects of Common Interest" in which the SGC project was left.

On June 12, 2018, the opening of the TANAP gas pipeline was held in the Turkish city of Eskisehir. Presidents of Azerbaijan Ilham Aliyev, Turkey Recep Tayyip Erdogan, Ukraine Petro Poroshenko, Serbia Alexander Vučić, Turkish Republic of Northern Cyprus Mustafa Akynchi, as well as the Prime Minister of Bulgaria Boyko Borisov, BP General Manager Robert Dudley, the energy ministers of a number of countries, heads of energy companies took part in the ceremony.

The foundation of this project was laid in Kars on March 17, 2015 with the participation of the presidents of Azerbaijan, Turkey and Georgia.

Prior to the opening ceremony of TANAP on May 29 of this year, the Sangachal terminal officially opened the SGC.

TANAP, which is one of the branches of the SGC, runs through Turkey. On the Turkish-Greek border, it will connect to the TAP, which provides for the transportation of Azerbaijani gas to Europe.

The transit of natural gas through Turkey via TANAP from 2019 on will be underpinned by an intergovernmental agreement (IGA) between Azerbaijan and Turkey [17]. The pipeline will be governed by the provisions of the Energy Charter Treaty of 1991, which does not include a third party access regime and unbundling. This is why it is possible for SOCAR to hold 51% of TANAP and an additional 7% through its Turkish unit SOCAR Turkey Energy and to also operate the pipeline. The IGA between Azerbaijan and Turkey even states that “The States agree that the participating interest of state entities owned by the Republic of Azerbaijan in the TANAP Project Entity shall not be less than 51% (fifty one per cent) of the total participating interest [18]. Under the EU regulation it would not be possible that a production company such as SOCAR operates pipeline infrastructure.

With its majority share and due to the fact that it operates TANAP, SOCAR thus controls the gas transit through Turkey. Therefore, Azerbaijan is in a position to allow or refuse the feed-in of additional gas quantities from other sources. This is of importance as the EU in particular speculates on the feed-in of gas from additional sources such as Turkmenistan, Iraq and Iran. Moreover, Azerbaijan may set the transit fees.

In Turkey, TANAP will have two exit points - in Eskisehir and Trakia provinces. The sale of gas in Turkey will be carried out by BOTAS company. The total length of the gas pipeline is 1850 km. The pipe diameter of the gas pipeline section from the Georgian-Turkish border to Eskisehir (Phase-0) is 56 inches, the length is 1340 km. Hence the gas will be supplied to Turkey. The diameter of the Eskisehir-Edirne-Europe section (Phase-1) is 48 inches, the length is 476 km. Phase-1 will be ready to receive gas for Europe in 2019.

This branch is the longest and largest in terms of the volume of pipelines built up in Turkey so far.

By realizing this project, Azerbaijan has once again proved its commitment to security, ensuring mutually beneficial economic cooperation throughout the world. TANAP is a step against hegemony and monopoly.
in the energy market. For many years the West has been carrying out activities to diversify energy supplies. Implementations of this idea are the Baku-Tbilisi-Ceyhan and TANAP.

TANAP demonstrates to the world the importance of the tripartite partnership between Azerbaijan, Georgia and Turkey. This unity reaffirms that regional cooperation can bring huge benefits to security and economic relations in a broad format. The regional partnership can help to peacefully resolve conflicts in the region.

Commercial gas supplies from Phase 2 of the Shah Deniz field development to Turkey under TANAP began on June 30, 2018.

The cost of the project is estimated at $ 7.99 billion. In the future, the capacity of the pipe will be brought to 24 billion cubic meters of gas per year, and then to 31 billion cubic meters.

The shareholders of the TANAP project are SOCAR (51%), SOCAR Turkiye Enerji (7%), BOTAS (30%), BP (12%).

Until 2026, it is possible to increase the capacity of the gas pipeline to 31 billion cubic meters of gas per year. At subsequent stages, the issue of delivering gas to Turkmenistan from the EU, Turkmenistan, Iran and Iraq and the Eastern Mediterranean via the pipeline may be considered.

TAP approximately 878 km long pipeline ships the gas coming through TANAP from the Turkish-Greek border at Kipoi cross Greece and Albania and the Adriatic Sea, before coming ashore in Southern Italy. TAP’s shareholding is comprised of BP (20%), SOCAR (20%), Snam (20%), Fluxys (19%), Enagas (16%) and Axpo (5%).

TAP is based on a 2013 intergovernmental agreement between Albania, Italy and Greece [19]. As Italy and Greece are EU member states and Albania is Energy Community member, the EU’s internal market regulation applies to TAP. In 2013, TAP secured a third party access exemption for half of the initial capacity of 20 billion cubic meters annually for gas volumes from Azerbaijan supplied under the relevant Shah Deniz gas sales agreements over a period of 25 years. The third party access exemption was granted under Article 36 of the Third Gas Directive.

TAP will be connected to the Italian natural gas grid, operated by Snam Rete Gas, allowing for gas to reach other European countries through Italian “exit points.” Gas flowing through TAP can also reach Austria and other Central European countries through the gas hub in Baumgarten, Austria through the Trans Austria Gas (TAG) pipeline.

For the transport of natural gas northwards the Ionian-Adriatic Pipeline (IAP) is supposed to be built. It would run from Fier in Albania through Montenegro, and Bosnia and Herzegovina, to Split in Croatia. In Fier, IAP would be connected with the planned TAP. IAP is based on a Ministerial Declaration between Ministers from Albania, Croatia and Montenegro [20] and was struck within the framework of the Energy Community. The stipulations of the EU’s internal market regulations would fully apply.

Both TAP and IAP have received funding or special status from the EU. Commissioning of the TAP pipeline is expected in 2020. As of the end of June 2018, 74 per cent of works were completed for the TAP project, including engineering, procurement and construction work [21].

SGC has become a reality; its implementation cannot be stopped. Azerbaijan has succeeded in explaining to Europe the advantages and benefits that this grand pipeline gives to it, competitive and at the same time not competing with anyone.

For Azerbaijan and Turkey, TANAP, as well as its continuation - TAP, is a purely commercial project, the task of which is to deliver gas from the Caspian fields to the European consumer. In Azerbaijan they do not try to "displace" anyone from the market and in general use pipelines as a means of pressure or blackmail.

In August 2018 Bulgaria joined the project. ICGB AD, which is the operator of the Greece-Bulgaria interconnect project (IGB), and the consortium for the construction of TAP have reached an agreement on the interconnection of pipelines. IGB is a gas pipeline that will allow Bulgaria to receive Azerbaijani gas,
in particular, extracted from the second stage of the Shah Deniz gas condensate field. The IGB will be connected to the TAP [22].

8. US interests
Of particular interest is the interest shown to this Azerbaijani project by the United States and personally by President Donald Trump. As S & P Global Platts informed in August 7, 2018 with reference to Trump's appropriate order, new US sanctions against Iran will not affect the SGC project. The phrase "exclusion of the natural gas project", which means the SGC, is mentioned at the disposal [23].

As it is known, new US sanctions on the energy sector, which will come into force on November 4, 2018, will affect companies that continue to conduct business with Iran. In this regard, BP wanted to get permission for the nonproliferation of sanctions for the Shah Deniz field development project, whose gas will go through the SGC. The matter is that (as noted earlier), the Iranian NICO has a 10% stake in the project of the second stage of development of the Shah Deniz field.

With this unprecedented decision, the US administration stressed the importance of the Azerbaijani project and the importance of Azerbaijan as a guarantor of Europe's energy security. The US President demonstrated that this project and cooperation with Azerbaijan is much more important for him than anti-Iranian sanctions.

The fact that anti-Iranian sanctions were not extended to the SGC project is very important from the point of view of a correct assessment of the existing geostrategic reality and taking into account the interests of Europe in energy security.

The US president supports the Azerbaijani project in any way, which in fact, does not seem to affect the US interests and, on the contrary, even to some extent contradicting the American plans for deliveries of overseas LNG to Europe. Nevertheless, a global view of things makes it clear that Azerbaijan, with its capabilities, is becoming a very serious player in the energy market. Moreover, it is very profitable to conduct business with our country, since its projects are not directed against anyone's interests, but, on the contrary, integrate the interests of the whole region and are always open to expanding this space.

Accepting the Greek Prime Minister Alexis Tsipras in Washington in October 2017, Trump thanked Athens for "contributing to the European energy security through the support of the Trans Adriatic Pipeline," hinting at the US interest in this project. And in August 2018 at a press conference with Italian Prime Minister Giuseppe Conte the Head of White House made a very remarkable statement: "Mr. Prime Minister, I hope that you will be able to build this competitive pipeline."

It should be noted that certain circles of Italy at times are at the peak of the project, declaring its alleged threats to the environment, tourism and so on. These vain fears were always refuted by specialists with figures and facts. Despite the unexpected announcement by the new government of Italy of the intention to "reconsider" its participation in the TAP construction project, during the visit to Baku, the President of this country, Sergio Mattarella, expressed full support for the TAP project and noted the importance of the Caspian region and Caspian gas for Europe [24].

In early August 2018, Premier Giuseppe Conte met with the mayor of Melendugno, through which the pipeline will pass. During the meeting, Conte reminded the mayor that the diversification of energy supplies to Italy is a strategic goal of the country [25].

It seems that after the start of the construction of the Italian site, fears of ecologists and other opponents of the TAP will disperse. And the unequivocal interest shown to the project by the United States will once again convince those doubting the global nature of this enterprise. It is no coincidence that in 2018 the European Investment Bank issued one of the largest loans in its history - 1.5 billion Euros for the implementation of the TAP [26].
9. Conclusion
The EU, which includes the most developed economies of the world and has very limited access to oil and gas reserves, has to secure large energy supplies from different sources at reasonable and stable prices in order to sustain economic performance and growth. Also, for Azerbaijan, intensification of energy contacts with the EU gives an opportunity not only to get hard currency, but also modernize its economy. As of the beginning of July 2018, the partners have invested more than $30 billion in the SGC project. Of these, 17.7 billion account for the Shah Deniz-2 project, the total cost of which is $22.7 billion, $4.2 billion for the expansion of the South Caucasus pipeline, worth $4.6 billion, $4 billion for the TANAP project, and 2.9 billion for the TAP project [27].

The SGC is being built with the support of Azerbaijan and consortium companies including SOCAR. If the EU needs additional volumes of gas for its market in future and still wants to diversify supply sources using new routes it will need an expensive pipeline track. Basically, as long as gas pipelines exist the EU and Turkey are provided with an infrastructure for long term gas transportation from neighboring countries through the Caspian region for many years to come. There would be no pipelines like that without Azerbaijan, and the EU itself would have to invest billions in the construction of a new pipeline system due to the growing demand for imported gas. In other words, the SGC has freed the EU and European companies from multibillion investments in the creation of strategically important pipeline infrastructure [28].

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