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Republic**

**Role of AR in the international natural gas market  
and its development trends**

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## **INTRODUCTION.**

Since the formation of the oil-gas civilization, the potential of the hydrocarbon resources are considered as the main strategic military and diplomatic force, the source of the formation of the political and economic strategy and the main factor of the national power in the world policy. Today oil and gas is considered as the main energetic component including the potential industry and economic-financial resources.

Although the other fields of the economy increase in recent times, the oil-gas industry is still the main social-financial part of Azerbaijan. This field also played the key role in the access to the international arena. The strategical importance of the TANAP, TAP projects within the framework of the “Sothern Gas Corridor” displays itself in this point.

The export of the Azerbaijani gas to the world market increaes the role of Azerbaijan in the system of the International Economic Relations. The importance of the energy resources in the world economy is undeniable. The importance of our country’s natural gas resources in Europe is also highly regarded not only economically but also politically. Our geographical position is also important as the hydrocarbon reserves. This position gain the chance to our country as the major transit country not only in terms of fuel exporter, but also the export of the energy reserves to the world market. According to all of these advantages keeping outside the gas sector is unacceptable. The existence and future development of the energy industry, especially the export of gas to regional and global importance of international projects as a part, there is acting as the major area of the country.

Currently, the world market witnesses the stage of “the competition of gas with gas”. The issue of the energy security became the important for the countries as the maintaining the military power. In such circumstances, the construction of the Southern Gas Corridor that has a great role for the European market offers great

opportunities for Azerbaijan. Evaluating properly these opportunities and using them in the energy market are important.

All the above mentioned issues reflects the relevance of the theme "role of Azerbaijan in the international gas market and its development trends ".

The thesis work with the theme on “The role and development prospects of Azerbaijan in the international gas market” consists the introduction, two chapters, four paragraphs and conclusion, and the references were given at the end of the thesis work.

The CHAPTER I named “The current state of the gas production in Azerbaijan” consists of the paragraphs named “Azerbaijan as one of the guarantors of the energy security”, and “the past, modern state and development prospects of the gas production in Azerbaijan”, and CHAPTER II named “Southern Gas Corridor” consists of the paragraphs named “The importance of the implementation of the "Shah Daniz 2" and the "Southern Gas Corridor" projects in the strategy of the gas output of Azerbaijan” , “The modern situation of the construction of TANAP and TAP international export pipeline” and “The evaluation of the **“Southern Gas Corridor”** in terms of its impact on the economic development of Azerbaijan”.

In the first paragraph, the international gas market, its current situation and development positions are identified, also the importance of the access of Azerbaijan to this market is indicated. The role of Azerbaijan’s gas is marked in terms of the energy security in the International Economic Relations system, especially the superior position of this role is indicated for the European countries. The list of countries implementing basic level of gas production in the world and export of gas and the important role of policy this field carried out to Azerbaijan in mixed market studies has brought to the attention .

The second paragraph consists of the information about the history, facing problems, modern situation and development prospects of the natural gas output in Azerbaijan. From the day that gas production was primitive and the importance of the

natural gas was not fully aware until today there has been considered the processes about the gas production, the level of meeting the demand of domestic and the access to the foreign market. In the XX century, the modifications in the gas production because of poor technical equipment, different political and economic problems, also after the independence, the gas production and the level of production are defined. In the early period of the independence, there has been dealt about the facing problem in this area, especially the abuse and the loss cases, also there has been stressed the discovery of the new gas fields on the land and in the Caspian Sea.

The level of gas production for 2008-2017 was indicated in the paragraph, in addition. the issues on the export of gas to Russia, Iran and Georgia was touched and information about the implementation of the export of gas pipelines was given.

The various of gas and gas condensate fields discovered in the Caspian sea, as well as the prospects of gas production and exports and their exploitation opportunity were investigated.

In the first paragraph of the II Chapter, "Shah Daniz 2" and "the Southern Gas Corridor" projects were taken into account in terms of the energy security of the World and Azerbaijan, it has been emphasized that the projects will open the way to which innovations in the system of the international economic relations in terms of both political and economic terms. There is information about the first part of the project of the Baku-Tbilisi-erzurum gas pipeline, which is important to focus on the "southern Gas Corridor", which also provides space to the details. The main participants of the project, operators and their contribution in the project have been emphasized.

In the last paragraph, it has been informed about the modern state of the construction of TANAP and TAP international gas pipeline, and the information was noted about the the construction of the pipeline in the different countries.

The main purpose of the thesis work is the study of the country's current reserves of natural gas and the modern condition on the access of the gas to the world markets, and determination of the prospects and possibilities. A number of local and

foreign literary sources, various newspaper and magazine articles and online resources about the subject were used in the study of the thesis work in the process of research of the matters.

## **CHAPTER 1. THE MODERN STATE OF THE GAS PRODUCTION IN AZERBAIJAN**

### **1.1 Azerbaijan as one of the guarantors of the energy security**

Azerbaijan that has independent and active foreign policy activity, participate as a leading country of the South Caucasus, has paramount importance in both regional and international economic security. Especially it participate as one of the main subjects which is important by ensuring energy security in the international arena on the basis of a purposeful and effective use of the rich energy resources . Our country is one of the main participants of the number of transnational projects that have global and regional scale. Just for this reason, it is not accidental that currently any project is not implemented in the region without the participation of Azerbaijan. Europe accepts paramount importance of the mutually beneficial cooperation with Azerbaijan. However, all these achievements are not obtained so easily , and it required so thorough a long history and labor .

Azerbaijan has always been the settlemen of the rich energy deposits and just for this reason it was the point of constant target of the powerful state . It was not easy neither before, nor later for our country to write his name in history as the first country in the world which produces oil-which is the wealth , but also could be the biggest disaster for our country. It is no coincidence, Azerbaijan only began to carry out the independent energy policy since the end of the XX century. In this point , It should be mentioned particularly the signing of document with 400 pages that reflected in 4 languages named as the "Contract of the Century" signed by 8 countries of the world (Azerbaijan, US, Great Britain, Russia, Turkey, Norway, Japan

and Saudi Arabia) and 13 famous oil companies (BP Amoco, Mcdermott, Unocal, Pennzoil, Itochu, Ramco, Delta, SOCAR, LUKOIL, Statoil, Exxon, Tpaoc, Turkey Petrols) on 1994 september 20. It is even possible to say that Azerbaijan has entered a new century, in 1994, not since 2000.<sup>1</sup> This contract opened the way to the signing of 30 various agreements with other countries and it gave the contribution not only to the oil production, but also to the development of the production and export of gas. Currently the importance of Azerbaijan can be characterized as the current situation on the global energy market and the situation in the system of economic relation from the point of view of providing a energy security.

In the XXI century, the natural gas that become the strategic natural resource will move to the history of energy and economy as the fuel of the hundred years. The natural gas which is cleaner than other energy resources in terms of carbon dioxide emission, increases the importance from the point of view of comprehensiveness and wide variety of the use of the natural gas. Also, beside the benefits provided by for the countries of the world, it is one of the actual and argumental issues in terms of creation of the energy dependence. Especially the recent events occurring between Russia and Ukraine show the importance of providing of the natural gas and the competition among different countries that are aware of this importance.<sup>2</sup> The main impact region of these events were the European Union countries providing natural gas to this place. As we know, this situation has lead to political and economic problems for European countries carrying out of 66% of natural gas through Ukraine and pointed energy dependence from Russia. It also leads to the growth in natural gas consumption growth and dependence. Therefore the Eu which searches alternative ways of energy supply began to take steps on the road to get faster results of the searches after facing a crisis in 2013.

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<sup>1</sup> “Azerbaijan: New address of the energy ”, *Deutsche Welle Türkçe*, 10 Mayıs 2014.

<sup>2</sup> “Ukraine: An Important Transit Country For Natural Gas and Petroleum”, Institute For Energy Research Analysis (24 Mart 2014).

At this point the "Southern Gas Corridor" project comes to the front as the project which will expand activities of the Eu countries in front of Russia and will prevent threats of energy of Russia.<sup>3</sup> These established political and economic situation provides the opportunities in front of Azerbaijan .

In the second half of the XX century, the concept of "energy security" entered in energy literature reminds himself with energy crises today after the experienced two fuel crisis. A guarantee of energy security is as one of the main factors of economic security and pursuing of the Independent internal and foreign policy .

Along with natural gas production, exports and consumption of some changes in the system of economic relations of the international gas market the ones who work for our country, there are also unpleasant situations in the construction of the global market. The main example of this is the growth of demand over supply in the market and lowering the price as a result of the increase of the number of gas exporting countries.

The price of natural gas is directly related to the prices of natural gas in the world , therefor the decline in oil prices affects the price of gas absolutely. However, as already noted, global natural gas market has been meet inimitable and rapid changes that were not like today.

In addition to natural gas resources, the invention of the new generation "rock-gas-sheyl gas" not considered as the classical gas cause the rapid change of the world gas market and it has been expected that these changes will continue for a long time, and it is inavitable that the importance of natural gas profile will not the same.

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<sup>3</sup> Vahap Taştan, "Güney Gaz Koridoru: Yeni Enerji Düzeninde Avrupa Enerji Güvenliği, Rusya, Türkiye ve Güney Kafkasya Üzerine Oyun Teorik Uygulama", Uluslararası Politika Akademisi, (15 Kasım 2013).



According to the investigations of the geologists, natural gas has the potential to provide the world with gas proposal with newly discovered rock-gas about 200 years.<sup>4</sup>

On the other side, Australia ,the global supplier of coal, is expected to get over Qatar, the largest exporter of liquefied gas export due to the rich rock gas resources. All this gives grounds to say that in the last period the prices drop 30% in the global gas market. Lets, first of all, should pay attention to gas producers of the world. According to the latest available data, the situation of the countries for the gas production, top five: 1) USA – 687 mlrd m<sup>3</sup>, 2) Russia – 604 mlrd. m<sup>3</sup>, 3) Iran – 166 mlrd. m<sup>3</sup>, 4) Qatar – 158 mlrd. m<sup>3</sup>, 5) Canada – 154 mlrd. m<sup>3</sup>.

As you can see, the North American has increased natural gas production dramatically , along with the full providing of the domestic market, he could provide the level of the cheapest prices in the world, and before the first compressed gas carries the way from USA and Canada in 2015, USA bought 35-40 billion m<sup>3</sup> of gas from Qatar until 2009, but now he doesn't buy gas and even carries out the export of gas.

Australia brought the production that was 48 billion m<sup>3</sup> in 2012 years up to 80 billion m<sup>3</sup> in 2016. According to the agreement with Japan and South Korea, the compressed gas by tankers will be delivered to the world. According to the forecasts, in 2020 the production will exceed 150 billion m<sup>3</sup> in Australia".<sup>5</sup>

Iran ,the main country which is in the interest of Azerbaijan, has already declared that the decline is expected in gas prices. Only in 2016,this country has increased production up to 12,5 billion m<sup>3</sup>.

The Iranian state oil and gas company reported that if sanctions are lifted, the annual output will reach to

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<sup>4</sup> Ahmet Cangüzel Taner “Dünya Doğalgaz Piyasası Projeksiyonları”

<sup>5</sup> “World Energy Outlook New Policies Scenerio 2015”, IEA,

200 billion m and per year they should sold 55-60 billion m<sup>3</sup> of compressed gas by tankers to Europe via Turkey and in the Persian gulf. It should also be noted that Iran is also a country with the lowest cost of gas production, so per 1000 m<sup>3</sup> of gas cost just 7-8 dollars.

As you can see, choosing the strong contender and the right policy and position in the mixed market intelligence is vital for export of gas reserves of the country to the world and ensuring gas export in the future.

### **1.2 The past, the current state and the development prospects of gas production in Azerbaijan**

The widely use of gas reserves in Azerbaijan was formed mainly in XIX century . In 1859, natural gas was used as fuel for the first time in the plant in order to get steam in Surakhany. In 1902, one of the wells drilled from this area was stuck the gas flow . Daily production rate of 57 thousand cubic meters of the gas well in Azerbaijan contributed to the creation of the gas transportation system. Since this year, gas began to be used as fuel in the heat of the stove and gas wells in oil production.

In 1907, Azerbaijan produced 130 million cubic meters of gas. Then the sharp decline of natural gas production and operation was observed due to the development of a strong gas fountain later, in Surakhani wells. The problematic issue was that, the volume of gas produced from natural gas has been much higher than its low consumer demand and it was impossible to complete and effective use of the big quantities of gas. Gas is simply released into the air. In those years growing political unrest, not finding the technological solution of the use of natural gas and existing economic difficulties influenced the dynamics of production . This depression related to natural gas was covered a long time and and continuous, for this and other reasons, natural gas production dropped from 48 million in 1919 to 34 million in 1920-1921. Also at that time, there was not fully aware of the importance of gas and about its

effectiveness. Mostly additional technological operations were demanded in order to achieve effectiveness during the production of associated gas .

The expansion of the sphere of use of natural gas became possible with the understanding of its meaning. As the wide range of technical and economic parameters of natural gas is discovered its consumption is subjected to changes. It was determined that the gas is extremely essential as a fuel in daily life and industry. Along with these advantages, other quality of natural gas, synthetic fibers of alcohol, plastics, synthetic rubber, organic solvents, fertilizers, explosives were made from various shades of natural gas.

In the XX century, and the progress of natural gas production and intensive development of this sphere caused the progress of other areas related to it and reconstruction of infrastructure. Natural gas is the dominant energy transformation due to many factors. The reality of civilization boom, the responsibility of the discipline for the protection of the environment, technological advances applied in the gas-related mechanism, the expand of the information environment, the further growth of the internet and electronic businesses and other socio-economic importance make the growth hopeful. Technological progress and growing energy market allowed the emergence of new trends in ecology requirements and economic transformation. In the post-oil era, an interim position of natural gas settled in transition to nuclear energy system began to attract the attention. Strengthening of discipline of natural gas and other profitability aspects of other energy efficiency of natural gas ensure the triumph over the other energy resources.

In the XX century, gas was produced in Azerbaijan mainly for the domestic issues, but later natural gas which has natural hydrocarbons and environmental cleanliness, superior use and easy transportation mean began to grow . Already in the middle of the XX century, highly energy-intensive industries began to be used in the provision of gas and electricity in Azerbaijan . All of these are related to implementation of production of natural gas fields such as "Bahar", "Bulla-Daniz", "Gunashli" found in the Caspian Sea is more effective than in previous years.

As the consumption increases, the range of gas production and expands and the process of gasification continues in the remote areas. However, natural gas produced at that time did not meet the domestic needs. Consumption and production continued to excel.

In 1991, after the first year of Azerbaijan gained its independence, gas production was about 17 billion m<sup>3</sup>, and 30-35% of it was involved in the production of electricity.<sup>6</sup> The presence of the infrastructure opportunities with great gas complex was very important for the country newly-gained its independence.

It has been described a network with six percussion that has 20-25 billion cubic meters of annual capacity, highway pipelines with 4 thousands km of the length and gas pipelines with 36 thousands km of small and medium pressure. This extensive infrastructure provides for Azerbaijan great transit opportunities and access to Iran, Russia, Georgia in the process of transportation. The process of developing hydrocarbon resources by foreign companies brought new achievements to gas industry of Azerbaijan. As a result of the researches, the discovery of big gas and gas condensate fields in the Azerbaijani sector of the Caspian sea, in the structure of "Garadagh", "Ashrafi" , and especially discovery of rich gas fields in 1999 in "ShahDaniz" field gave the information on the strong development of natural gas for the future. It should be noted that, the scale of gas reserves is larger than other structures. Expert estimates mention that the gas reserves are 3 trillion cubic meters in Azerbaijan. Strong development prospects of the potential gas industry in our republic are not worth only for the adequate natural resources and infrastructure. The development of gas industry in the country is related to the development of science, the establishment of the research institute in the relevant industry. Furthermore, the availability of experienced personnel staff and specialists is an important factor for the development of the industry.

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<sup>6</sup> "New directions of the creation of market mechanisms in the oil and gas industry"- E.M.Hajizade, T.A.Pashayev

We should note regretfully that, there was not the organization representing the relevant complex of the gas industry in one organization and circulation, and carrying out the monitor of it. Gas production, maintenance, and the relevant association which provide the transportation and also the supply complex of gas are assembled in the individual organizations. The production and processing of natural gas are gathered in the oil company, and transportation and supply networks are assembled in the newly created organization - "Azerigas" only after gaining independence. However, in the first period, this situation does not create conditions enough for the effective management of processes on natural gas and failed to provide the management from the same centre.

Also, the work of the economy community of "Azerigas" was not appropriate to the market economy in the first period, and it obstructed to gain the highly effective results. But over time, the adaptation process of the economy to the modern capitalist system, affected the energy industry effectively, as in other areas.

In the first years of independence, the main tasks were the establishment of modern governance structure, reorganization of the relevant infrastructure and the elimination of the current negative cases in gas production and in the large gas flow in Azerbaijan. It should also be noted that this position can not be considered as quite soluble today and it is kept as the main duty again. However, one of the most important duties for this period-the effective use of resources is reflected here. As we know from the world experience, the inefficient use and the waste of resources are regarded with the countries which have the rich natural resources, but have not efficient and developed infrastructure. The richness of the gas resources of Azerbaijan has historically paved the way for the irrational use of these resources. Despite all this, the standard acts that normalize the efficient use of natural resources, including gas were adopted and the appropriate control mechanism was elaborated.

After gaining its independence, it has been observed the the regressive, destructive trends observed in the gas sector of Azerbaijan, as in many areas, and the loss of non-professionalism was increased by 5-6 times. An analogical situation is also characterized by the production and supply of the electricity. Even the relevant organizations that manage the gas supply pleading the oldness of the equipment and devices , convincing the coordination organization by showing the percentage of the technological losses more, they achieved the increase of the plan of gas losses by 8,6% in 1993. Conformation of the gas control bodies to the gas supply organization exacerbate the lack of control. In the first years of our independence, and natural gas was partly purchased from Turkmenistan, and partly from Kazakhstan in 1992-1995. Over these years, 4,672 billion cubic meters of 9,1 billion cubic meters of gas were erased to the loss through the appropriate currency losses from the international prices from Turkmenistan.<sup>7</sup> Here, if we approve the average price of \$ 75 for per 1000 cubic meters, we will determine that more than \$ 350 million of funds were destroyed completely. Indeed, turkmen and kazakh gas payment was implemented. At this time, in the ongoing process of barter, in the interchanging of the products that our country needs with debts, the applied prices were not so high. Thus, the products that were worthy for that period caused completely disappearing from the hand just for the loses. The period of gas industry with mono-products left behind. Gas industry and monoməhsullu time left behind. Now, many range of products is processed by natural gas. Gas products replaced steel, glass, wool, silk, wood and grain products. 2 tons of ethyl alcohol, 9 tons of grain, 22 tons of potatoes, 30 tons of sugar beet or 5 tons of compressed gas is required for obtaining alone a ton of synthetic rubber. Also, in all circulation of the economic chain, natural gas has different and effective aspects. The funding indexes is more 6 times than oil and coal in the procession of gas. Here the productivity is hugher 55 times than coal, and 6 times than oil. The applying of natural gas increase the productivity 10 times in the steel industry, and decrease the enery consumption 2 times in the vehicle

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<sup>7</sup> <https://www.setav.org>

transportation. The taxation of gas within the framework of an international agricultry is 40 %. In the oil industry, this figure is more than 50%. Gas is considered as the cheapest energy transporter in the process of evaluation. Also, gas supply differs from oil supply for many advantages. After the minor cosmetic processing for the standardization of gas, the transported natural gas is given to the consumer. It is also same for the industrial enterprises and individual consumers. Unlike natural gas, transported oil passes through very complex, different and auxiliary processess. In the aspect of the variety of the fields, natural gas is more homogenous and qualitative for its feature. The liberalization of the environmental concerns, the growth tendency of the world competition and the electronic communication will be embodied in the lead of energy system of natural in the new prospects. The global energy system that passed through many stages will probably enter to the era of gas.

The gas industry is characterized as extremely inconvenient specific area against the background of the market economy in the standard approach. there are also some problems along with the achievements in the all countries where gas industry was improved includin the developed countries of the West. Establishment them ready to the working and technological innovation are profitable and effective in the condition of the presence of resource potential. Working the relevant projects which put the large investment need, find the deal with high support of the state and large multinational companies specialized in this sphere. The establishment of the gas system integrated into the West in Azerbaijan is effective in parallel with development of the gas industry and the unification of its regulation methods in Europe. And in the process of transportation of natural gas, the pipeline transportation is as the main alternative and compressed gas transportation works as tankers. However, the delivery of natural gas to the last consumer demands the pipeline transportation even in the transportation by tankers.

Currently, the total length of main gas pipeline in Azerbaijan is more than 3390 km.<sup>8</sup> The diameter of 836 km of these is 1220 mm, diameter of 802 km is 1020 mm, and the diameter of the rest of them is 720 mm, and lower. Beside this, there is a system of gas pipeline with the length of over 36000 km in the gas supply system of the country, and the population, residential and industrial enterprises are supplied with gas in 12 districts of Baku and in 57 regions through these. The gas supply of these systems are carried out mainly in the sea and onshore fields. Along with gas condensate field of "Garadagh" that discovered in the middle of the XX century and underlined the gas supply system over the time (was exploited since 1957 and its supply was 16.5 mlrd.m<sup>3</sup> in 1970), 4 fields-located in the sector of Caspian sea-Shahdaniz, Bahar, Sangachal-Duvanni-Zira and Bulla ensures the gas supply in Azerbaijan. Along with these, perspective gas condensate fields-Umid, Ashrafi, Dan Ulduzu, Nakhchivan and others confirm the presence of large gas potential. Export of natural gas to Russia, Georgia and Iran begins from the pipeline system of Gazimammad in our country.

**1. The total length of the gas pipeline from Gazimammad to (Mozdok) Russia is 700 km, and also the section passing through the territory of Azerbaijan is 227,7 km.** The annual capacity of the gas pipeline is 13 mlrd.m<sup>3</sup>. The pipeline was put into operation in 1982. It should be mentioned that, Gazimammad-Mozdok pipeline can provide transportation of gas in both directions. It may be asked that, why Azerbaijan carrying out the large international gas projects, planing the transport of gas to Europe, exporting gas to Georgia and Turkey, buy gas from Russia Federation? Does gas reserves of Azerbaijan not meet the needs of the country or any political purposes are based here?

The main issue is that, the underground storages named "Garadagh" and "Kalmaz" with a capacity of 2 billion cubic meters were digged according to the project of SOCAR, and then the compressor stations were built and the capacity of the underground storage were expanded. Initially, it has been raised from 2

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<sup>8</sup> The news on the Azerbaijan National Aerocosmic agencies, 2015, №1(17) S.59-66



billioncubic meters to 3,5 billion and then to 5 billion. Currently, the capacity of the underground storage is 5,5 billion cubic meters, but the exporting of gas in order to fulfil these storages is not possible yet in Azerbaijan. It is possible to fulfil the storage reserves up to 3,5 billion cubic meters. In other words, in the sprin-summer season, only the quantity of gas supplies for the winter season can be done. Here the main goal of the Azerbaijani side is to fulfil those storages due to the export of gas from Russia and to dtermine the reality that the capacity of these wells is 5,5 billion cubic meters. It should be noted that, gas purchased for the technical purposes is bartered then.

In fact, Azerbaijan can also carry out this deliberate purchasing with Iran, but the main problem is related to the poor infrastructure. So, the pipeline providing the gas deal with the Islamic Republic of Iran can not provide two-sided stream and it makes process impossible.

**2. The total length of gas pipeline bringing Azerbaijani gas to Bind-Biand station of Iran through Astara is 1474,5 kilometers, also its length is 210,5 kilometers in the territory of Azerbaijan.** The annual capacity of the pipeline that was exploited in 1970 is 10 mlrd.m<sup>3</sup>. This pipeline is currently used only for barter. So, The Nakhichevan Autonomous Republic that is under the blockade was supplied with gas after the intermission of 14 years in 2005 and today Azerbaijan buys daily average of 1 million cubic meters of gas from Iran, and this fuel is transferred directly to the Nakhchivan Autonomous Republic. Instead of this, Azerbaijan returns that amount of gas to Iran through Astara pipeline.

3. Azerbaijani gas pipeline is transported by two lines with length of 378 km and the diameter of 1220 mm and 1020mm , passing through Gazakh to the territory of Georgia, Gardabani . 1st line was exploited in 1970 and its annual capacity of gas is 10mlrd m<sup>3</sup> . The 2th annual line lines started its activity since 1979 and its annual capacity of gas is13 mlrd.m<sup>3</sup> .

The State Oil Company of Azerbaijan (SOCAR) engages in searching, exploration and exploitation of oil-gas fields, processing, production, transportation

of oil, gas and gas condensate , selling of the oil and petrochemical products and gas in the domestic and foreign markets, as well as, the supply of the industry and population with natural gas in the country.

SOCAR works on exploration, preparation and processing of oil and gas fields on land and at sea, preparation, processing and transportation of oil, gas and gas condensate, also selling of produced products in the domestic and foreign markets, stable and sustainable payment of the needs of consumers related to the energy suppliers in the whole territory of the republic. He also performs large-scale research and design work. The activity of SOCAR consists of providing effective activity and development of oil and gas industry as a sole complex, and ensuring the reliable payment of energy needs of consumers.

SOCAR carries out joint projects with many companies of the world for producing of natural gas more efficiently both offshore and onshore. SOCAR has signed 26 agreements with more than 30 companies from over 20 countries of the world on the joint development of oil and gas fields of Azerbaijan up to date.

The "Azeri-Chirag-Guneshli", "Shah Daniz", Baku-Tbilisi-Jeyhan and South Caucasus gas pipeline projects are more significant for their global importance.

Currently, "Azeri-Chirag-Guneshli" and "Shah Daniz" projects which are at the center of world attention are being implemented in the Azerbaijan sector of the Caspian Sea and just in the sea.

Now, SOCAR, the Azerbaijan International Operating Company and (AIOC) the "Shah Daniz" consortium present in Azerbaijan as the main gas producing companies. It should be noted that the AIOC created at the end of 1994. It is the operation company that created on behalf of the shareholders to implement the terms of agreement named "Joint use and the delivery of oil fields in the Azerbaijan sector of the Caspian Sea " signed with some major oil companies of the world and the State Oil Company of the Republic of Azerbaijan. It includes 11 major oil companies

representing 7 countries (the UK, USA, Japan, Norway, Russia, Turkey and Saudi

<b>Years</b>	<b>SOCAR</b>	<b>Azerbaijan</b>
<b>2008</b>	7752.6	23405.4
<b>2009</b>	6903	23681.6
<b>2010</b>	7178.9	26349.6
<b>2011</b>	7084.2	25752.9
<b>2012</b>	6924.6	26908.8
<b>2013</b>	7140.1	29456
<b>2014</b>	7222.8	29617
<b>2015</b>	6871.4	28977
<b>2016</b>	6266.7	29367.1
<b>2017</b>	6089	28597.9

Arabia) which operate on the basis of production sharing.

In general, over the past 10 years, gas production in Azerbaijan is reflected in the following table and graphic.

Table 1: 2008 – 2017 Gas Production (Annual) in million m<sup>3</sup>

Source : [www.socar.az](http://www.socar.az)

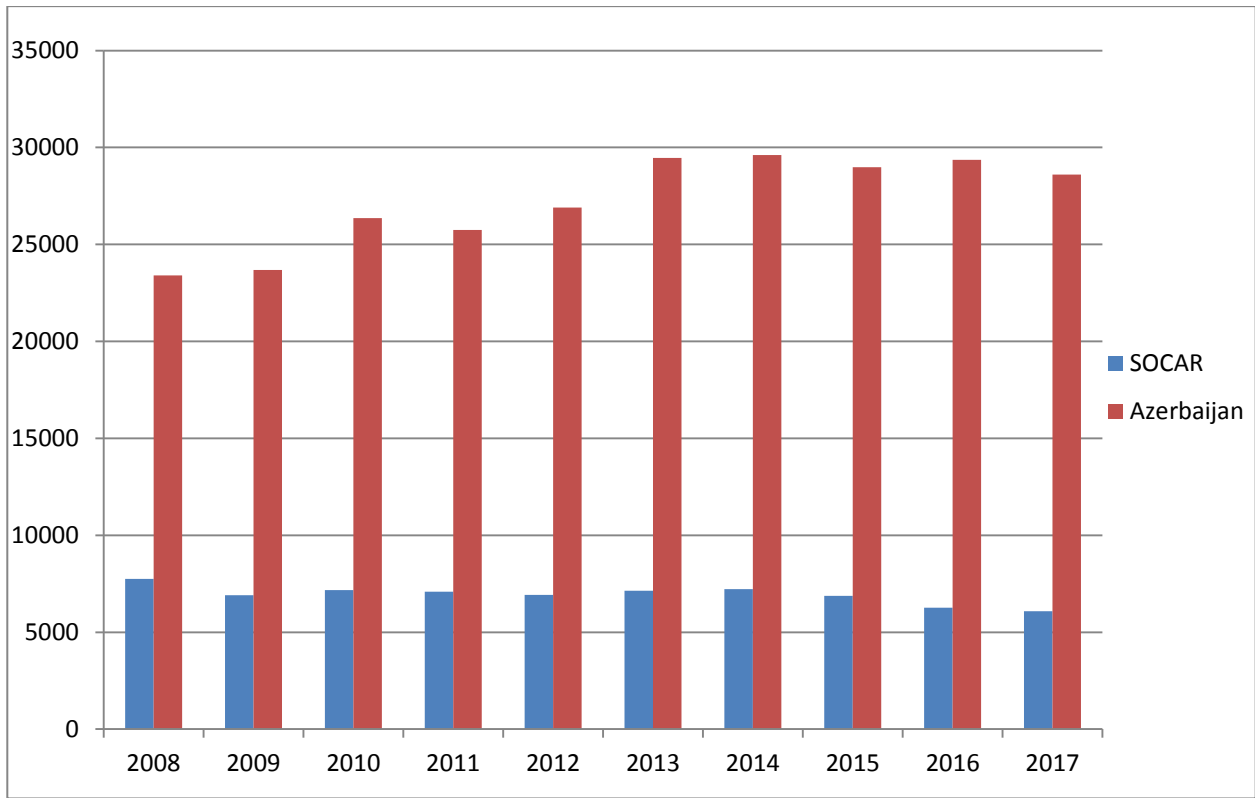


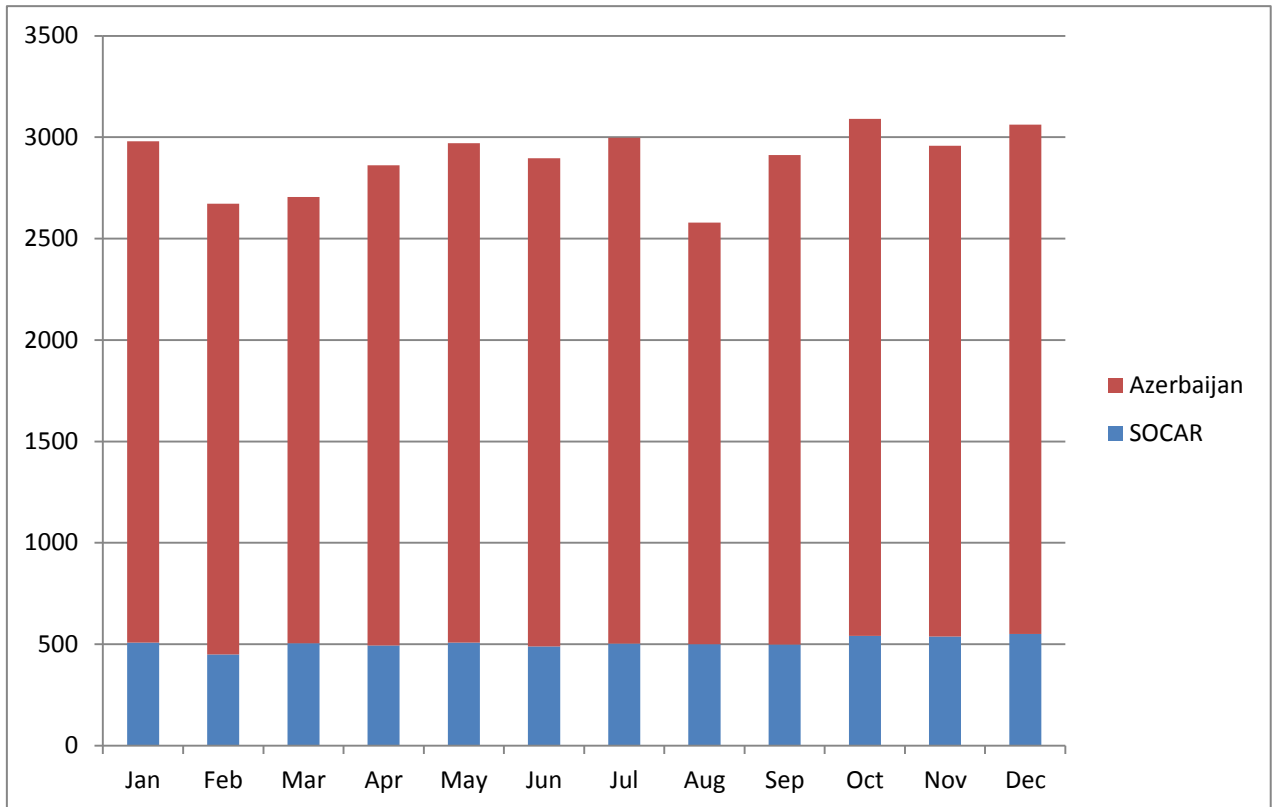
Chart 1 : 2008 – 2017 Gas Production (Annual) in million m<sup>3</sup>

Source :[www.socar.az](http://www.socar.az)

<b>Monthly</b>	<b>SOCAR</b>	<b>Azerbaijan</b>
<b>January</b>	508.3	2472.4
<b>February</b>	450	2222.3
<b>March</b>	504.4	2201.3
<b>April</b>	494.8	2366.2
<b>May</b>	508.1	2462.7
<b>June</b>	489.3	2406.9
<b>July</b>	503.3	2494.7
<b>August</b>	500.9	2077.6
<b>September</b>	498.7	2414
<b>October</b>	541.2	2549.3
<b>November</b>	538.7	2419.3
<b>December</b>	550.9	2510.6

Table 2: Gas Production (Monthly 2017)

Source :[www.socar.az](http://www.socar.az)



**Chart 2: Gas Production (Monthly 2017) in million m<sup>3</sup>**

As you can see, Azerbaijan produced 37 million tons of oil and 28,6 billion cubic meters of gas in 2017. SOCAR produced 7,4 million tons of oil and 6,1 billion cubic meters of gas at their own expense. Regarding to Azerbaijan International Operating Company (AIOC) and the "Shah Daniz" consortium, they produced 33,5 million tons of oil and 23,1 billion cubic meters of gas. It should be mentioned that the government of Azerbaijan plans to produce 29 billion cubic meters of gas and 796,9 tons of oil in 2018. The rich natural resources of the Caspian sea offers great opportunities for Azerbaijan not only in the past and present, but also in the future prospect. Now, besides of the discovered gas fields, there are a number of fields which are discovered, but not exploited or not fully operated, and they have proved that the production industry of the hydrocarbon reserves have an indispensable role over a long time. In addition, the known resources and fields do not exclude the existence of new ones. As already noted, according to the conducted estimation, gas reserves of Azerbaijan are forecasted at 3 trillion cubic meters. Along with the "Shah Daniz",

"Absheron", "Nakhchivan", "Shafag", "Asiman", "Zafar Mashal" and other fields, development of "Babak" and "Umid", as well as, considering Production Sharing (HPB) contracts which have participation of foreign companies, we can see that the gas potential of Azerbaijan increased to 1.4 trillion cubic meters in the last 10 years. Some experts believe that gas reserves of Azerbaijan which is already known and ultimately counted may reach to 5 trillion cubic meters.

As you know, after a long break, exploration work launched in the prospective structure of "Umid" from domestic resources has ended with great success. According to the preliminary estimates, the recoverable reserves of the field are estimated at 200 billion cubic meters of gas, 40 million tons of condensate. Currently, the work continues successfully in the the second well drilling in order to define the reserves of the field. Also, no.14 gas condensate well with new high production is exploited at the field of "Umid", at the end of 2016.

The excavations began in march 2015 in order to appropriate the gas condensate reserves and to approve of hydrocarbon reserves of the north-western parts. Increasing of the production step by step and raising of well to the optimal routine are planned for the net time. 1 million cubic meters of gas and 150 tons of condensate are expected from the well every day. The obtained positive results pave the way for the installation of a new platform in order to involve the north-western part for workin and for works in the direction of attraction of the full-scale development of the field . It should be noted that, currently, two wells-no.10 and no.12 are exploited with the production on 750 cubic meters of gas and 230 tons of condensate per day at "Umid" field. After the restoration of the state independence of Azerbaijan, the results gained from the firts field of "Umid" has increased the productivity prospets in the Azerbaijani sector of the Caspian Sea and the possibilty of opening of new fields and beds. Already the stock reserves of "Babak" structure are estimated at the capacity of 400 billion cubic meters of gas and 80 million tons of condensate. At the same time, according to preliminary estimates of experts, it has been assumed that there are

hydrocarbon reserves on the "Absheron" field with the capacity of 350 billion cubic meters of gas and 45 million tons of condensate .<sup>9</sup>

One of the important issues related to industry of the natural gas is to eliminate or at least to minimize losses during the production and transportation. For this, the main problem is to improve the infrastructure and the equipments used in gas production and transportation is to meet the standards. In recent years, although there were a number of important steps in this area , especially there is still a need to eliminate losses during transportation of gas.

If we look at the leakage and the gas loses during the as production for the years, we can observe that the capacity of the loses decrease seriously as a result of the preventive measures undertaken by the State Oil Company Of Azerbaijan. But a number of loses occurre for ddifferent reasons continues to remain broad.

All this lack of the quality makes it necessary to work on the concept and strategy related to the developing gas scenario politically and economically in our republic. Crude sales of the further exported gas of Azerbaijan to the foreign countries and establishment of the new production areas related to natural gas are the alternatives which stands at the heart of this strategy. Economic development laws and international empiricism explain more acceptable the scenario of expanding the production in this alternative. The research suggests that the main condition for the effective use of increasing gas resources in the country is related to the modernization of infrastructure and institutional reconstruction. The new gas strategy formed from institutional and infrastructure modernization explains the following priority comes.

- Reducing the norm of natural gas production that will remain at the disposal of Azerbaijan, sending natural gas to the foreign countries as a crude form, but not carrying for the production sharing contracts

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<sup>9</sup> [www.bp.com/az](http://www.bp.com/az)



- Expanding of production sharing in the "Shah Daniz" structure, increasing of the norm of the domestic production in the traditional and prospects fields;
- Taking systematic measures in the direction of expansion of the legal framework due to the liberalization of domestic market, formation of the independent gas supplier network, development of long-term strategic investment program;
- Providing of the transition to the use of devices and equipments with more economical mode and less energy capacity in the consumer sector ;
- Improving of the system of subscribers of the country in accordance with growing consumer demands and social development in the modern and innovative mode;
- Not establishment of new gas processing plants, gas chemistry products plants, modern liquefied, compressed and solid gas production combines, and forming of extensive consumer network that produces gas equipment and machines.<sup>10</sup>

The powerful techno police should be created in the country by directing of the revenues gained from this implementation with scientific capacity, and it should be able to take the great benefit from multiplicative effective of the growing natural gas resources.

In general, our country is provided with natural, economic, human etc. resources in order to improve the fuel-energy and especially oil-gas industry at the highest level. The main goals is to manage the system optimally, to pursue a correct policy and to provide the development on the basis of effective activity and to to inherit it to the future generations.

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<sup>10</sup> Elshan Hajizade, "Efficient use prospects of natural gas of Azerbaijan" 15.01.2015

## **CHAPTER II. THE SOUTHERN GAS CORRIDOR**

### **2.1 The importance of the implementation of the "Shah Daniz 2" and the "Southern Gas Corridor" projects in the strategy of the gas output of Azerbaijan**

The energy resources participating as the main goods of the international trade in the system of international economic relations are considered the major organic part and negotiator of the world division of social labor. In modern times, 1/3 of energy resources is delivered to the consumers crossing the boundaries of the country. This figure is 10% for coal, 40% for oil and 20% for natural gas.<sup>11</sup> Such reality is due to the unequal distribution of energy resources to the different geographical regions of the world and their remoteness from the center of the respective energy consumption. "The concept of sustainable development" ensures a balanced management of situation. This concept makes inevitable the transition to ensure the countries with the consumers of energy resources, economical efficiency of the energy system and environmental security. Natural gas has more different and important character for its quality parameters in this orientation.

Natural gas resources are huge and global largely. Its global reserves proven in the first decade of the XXI century is calculated as 150 trillion m<sup>3</sup> and its special influence increases in the world energetic balance constantly. This dynamism comes from the sharp demand for electricity that began in 1945. Since 70 years of the last century, this trend is even more accelerated from population growth and improvement of living conditions. In the XXI century, the growth rate has entered a new phase. Before 2025, in the middle of the century, this speed will increase its influence up to 30 percent in the energy balance with the pace of 2,5%. A larger scale of speed will be observed in the developed countries including 3% in Europe, 8% in

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<sup>11</sup> Enerji arz güvenliği ve Güney Gaz koridoru (GGK), Erdal Tanas Karagöl, Salihe Kaya, Seta yayınları 2014 ,№108

Southeast Asia and 5% in general.<sup>12</sup> The leading countries of the world for gas reserves are Russia and Iran. The proven world natural gas reserves in Russia uniting more than 1/3 m3 of the gas reserves are calculated more than 50 trillion and their period of exhaustion is 80 years. Along with Russia, Kazakhstan and Turkmenistan have also considerable power for the gas potential in the region. The nearness of Iran to this geographical region, makes the institution of alliance like OPEC to the agenda . Even the religious leader of Iran has also appealed to the Russian government for this reason.

The power related to natural gas reserves belongs to Middle Eastern countries. They accounted for 35,1 percent of world gas reserves and the period of its operation is for 256 years. Recently, a high number of consumer demands is seen in China, India and Turkey. The greater volume growth trends are related to Europe where Azerbaijan integrates to. According to experts, the European gas demand will rise to 800 billion from 500 billion after 25 years, and this time the internal production will fall from 200 billion to 120 billion and growth of consumption will affect to the energy production particularly.<sup>13</sup> This increase is conditioned as the environmental demands.

The wide use of natural gas In Europe was related to the discovery of the new fields in Spain, France (Lak field), Holland (Sloxtern field), Germany, Poland, Romania, Austria and later in the coast of the Southern Sea of Uk in 1950 and this resources accelerated the gasification in the continent. The transport of surplus reserves of gas supplies of the Soviet Union to Europe and the giant gas field found in Norway in 1970 caused more widespread consumption of gas in this region. Currently, Europe has the world's most developed gas industry complex, modern network of gas supply and the companies which produce the high-quality industrial equipment, gas devices. Here the main gas sales are implemented by Russia, British

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<sup>12</sup> [www.papiroom.net](http://www.papiroom.net)

<sup>13</sup> [www.enerjienstitusu.com](http://www.enerjienstitusu.com)

and Norway. In the last decade, the new participants as Algeria, Tunisia, Libya joined to the list of gas supplier countries in this market. The appropriate list continues with the region countries of the Caspian sea and the importance of this line will increase in the near future.

The gas markets have worked slowly due to their transport features, difficult infrastructure for a long time. This infrastructure includes the main gas pipelines equipped with gas compressor machines, gas storages, processing plants, methane-transported tankers, special terminals and others. Just these factors help to develop the gas market at the regional scale. Despite the overall global trends, natural gas market is based on the regional character.

The Growing technological advances accelerate the development of gas transportation expanding the boundaries of it. The main lines conquer the thousands kilometers of lengths crossing the path of the seabed trajectories in modern times. This appearance reflects itself more clearly in the market of the European Union affected fundamentally by political, economic, ecological and social problems of the natural gas industry.

Eu countries see the increasing gas demand in the improvement of the gas market in the region, particularly in its diversification. Although this strategy is based on natural economy, it comes from energy security concerns mostly. Thus, the non-acceptance of the supply conditions of "Gazprom" company of Russia- the most spectacular corporation of the world, for Europe, and the other situations related to the providing of the alternatives for the EU to choose the adequate strategy. Currently, "Gazprom" has 30 percent of the market share paying 150-160 billion m<sup>3</sup> of gas demand of Europe annually in this market.<sup>14</sup> In general, the Europe provides its gas demand by Northern Europe, North Africa and as noted by Russia. Turkey acts as

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<sup>14</sup> Dünya Doğalgaz Piyasası Projeksiyonları, Ahmet Cangüzel Taner, İstanbul 2014, page 256.

the main transit country, and the Southern Gas Corridor acts as the best alternative in the diversification this market .

In other words, the Southern Gas Corridor take places as one of the most important projects in order to reduce the dependence of Russia in terms of European energy. The power of "Gazprom"-the largest energy company of Russia and the largest natural gas producing structure in the world, on the setting price of gas, using the energy power of Russia in every international crisis, hindering of high energy dependence in terms of European Union against the political decisions will load more different missions over the project of Southern Gas Corridor. As the economy increases, while the Southern Gas Corridor plays the effective energy source for



Turkey, it means the increase of political maneuvering for the countries of the European Union, along with the economic importance.

**Figure 1. The Southern Gas Corridor**

Source: [www.enerjienstitusu.com.tr](http://www.enerjienstitusu.com.tr)

However, as we know, no matter how alternative energy sources are clean, but is unfavorable financially , in other word, these resources for Europe that have the most widespread use of alternative sources of energy will not be crucial such a long time. It also confirms hegemony of hydrocarbon reserves over the world would extend for a long time. Just this reason once confirms again the importance of the Southern Gas Corridor for Europe indirectly.

There is another important significance of this corridor for Europe. As it has been known, Europe carrying out the consumption of 500 billion cubic meters of gas annually and this demand is expected to increase to 800 billion in the next 20-25 years, the gas proposal for 10 billion cubic meters of gas per year has a very small role.<sup>15</sup> It is not accidental that a senior member of the Eu, Gunther Oettinger drew attention to this issue in his explanation. According to the senior member of the commission, the transportation of not only Azerbaijani gas, but also Turkmen, Iraqi even if the political agreements are reached the Iranian gas via Southern Gas Corridor to European market is one of the major issues which is important for commission. Trans-Caspian pipeline I plays an important role in transportation of Turkmen gas to Azerbaijan and from there to Europe.

The situation gives grounds to say that near to the importance of the transportation of 16 billion cubic meters of gas by the Southern Gas Corridor to Turkey and from there to Europe in the initial stage, as well as increases the transit role of Azerbaijan in ensuring the energy security of the region.

If we talk about the details of issues on the southern Gas Corridor project, we once again witnessed that how this project is important for Azerbaijan.

Gas produced within the framework of "The Shah Daniz Stage 2" project will be transported to Europe from the Caspian sea by a distance of 3500 miles.<sup>16</sup> For this,

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<sup>15</sup> Enerji arz güvenliği ve Güney Gaz koridoru (GGK), Erdal Tanas Karagöl, Salihe Kaya, Seta yayınları 2014 ,№108

<sup>16</sup> [www.bp.com/az](http://www.bp.com/az)

expansion of a number of existing infrastructure and building of chain of the new pipelines are required:

- The existing South Caucasus Pipeline (SCP) will be expanded through the new parallel pipeline through Azerbaijan and Georgia.
- Trans Anadolu Pipeline (TANAP) will be transported the Shahdaniz gas through Turkey.
- Trans Adriatic Pipeine (TAP) will transport gas to Italy through Greece and Albany.
- These projects is known as the Southern Gas Corridor together. It has been assumed that, it is one of the biggest and most ambitious projects in the world oil and gas industry, and is also the complex strategic process including seven governments and 11 companies. The southern Gas Corridor will change the energy map of the region by linking gas reserves of the Caspian region to European markets as a project that has no analogue.
- The role of the Baku-Tbilisi-erzurum gas pipeline should be emphasized, on the issue of Azerbaijan's gas export on the agenda.
- the pipeline is put to use in order to transfer natural gas from the "Shah Daniz" field located in the Azerbaijani sector of the Caspian sea to Georgia and Turkey. Pipeline starts from the Sangachal terminal near Baku. This pipeline is in the same route with the Baku-Tbilisi-ceyhan oil pipeline (BTC) in Azerbaijan and Georgia to the Turkish border (here the main goal is to maintain the ecological balance and to minimize the damage to environment and natural landscape).
- The total length of the pipeline is 691 km. 443 km of it is in Azerbaijan, and 248 km of it is in Georgia. Pipeline diameter is 42 inches. The last delivery point of the pipeline is in the Georgia-Turkey border. The length of the pipeline is 280 km in Turkey (to Erzurum). The part of the pipeline from the

Georgia-Turkey border to Erzurum is considered a part of the gas pipeline system of BOTAS company.

- This pipeline putting into operation delivers "Shahdaniz-1" gas to Azerbaijan and Georgia at the end of 2006 , and from july of 2007 to Turkey.



• **Figure 2. BTE gas pipeline**

**Source : [www.socar.az](http://www.socar.az)**

The agreements related to the implementation of projects of Baku-Tbilisi-erzurum gas pipeline were signed with Turkey on march 2001, 12 and with Georgia on september 2001, 29. President Heydar Aliyev made statement for the "transportation of natural gas of Shah Daniz field via the Baku-Tbilisi-erzurum route" at the signing ceremony of the agreement with Georgia. The head of state once again stressed the importance of pipeline and spoke about the importance of Azerbaijani energy resources to foreign markets in his statement:



"We have discovered the largest gas deposit in "ShahDaniz" field of the Azerbaijan sector of the Caspian Sea. According to preliminary data, its reserves are 1 trillion cubic meters. Of course, the issue of export of gas once again raised. There is no doubt that the Baku-Tbilisi-Jeyhan oil pipeline and the Baku-Tbilisi-Erzurum gas pipeline will be constructed successfully and the oil and gas will flow from the Caspian sea, from Azerbaijan through Georgia to Turkey and from there to other countries".

The State Oil Company of Azerbaijan Republic and The Project Participants such as BP, Lukoil, NICO, Statoil, TPAO, TOTAL signed the agreement on the exploration, development and production sharing of "Shah Daniz" perspective fields which is located in the Azerbaijani sector of the Caspian Sea and is one of the largest gas and gas condensate field in the world in June 4, 1996. Natural gas reserves of "Shah Daniz" field are more than 1 trillion cubic meters and its condensate reserves are more than 300 million tons. Natural gas production is projected at 8 billion cubic meters within the framework of the first stage of the field development (in the period of "plato"). Produced gas will be supplied upon the respective agreements to Turkey (about 6 billion cubic meters per year), Georgia (about 0.3 billion cubic meters per year) and Azerbaijan (about 1.5 billion cubic meters per year). Azerbaijan Gas Supply Company was formed with the operation of "Statoil" company of Norway in order to manage the sale and marketing of gas within the framework of the Phase-1 project on full-scale development of the "Shah Daniz" field. The first gas to be produced from this field will be used to meet domestic demand of Azerbaijan. At the same time, the agreements were signed on the sales of gas that will be produced in the stage of Phase-1 to the Turkish company of "Botas" and the International Operations Company of Georgia. Agreements signed between Azerbaijan-Turkey, Azerbaijan-Georgia, the Azerbaijani-Turkish-Greece will contribute to transport gas from "Shah Daniz" to Europe. According to the forecasts, about 12 billion cubic

meters of natural gas is to be produced in the 2th stage of the field development annually.

The production from the "Shah" Daniz field which is considered one of the richest gas fields in the world began in december 2006. 18,8 billion cubic metres of gas were produced from this field since 1 April, 2010. Natural gas produced from the "Shah" Daniz field in the Azerbaijani sector of Caspian Sea through Baku-Tbilisi-erzurum pipeline has transported to Georgia since february 2007. Gas produced from the "Shah" Daniz field via the South Caucasus gas pipeline on the route of Baku-Tbilisi-Erzurum crossed the Turkish border and entered to the gas pipelines system of the brotherly country on 3 July, 2007. The capacity of the South Caucasus gas pipeline is 20 billion cubic meters.

In 2017, Approximately \$ 29 million operating expenditures and \$ 784 million of capital expenditure were spent on the activities related to the Baku-Tbilisi-Erzurum or South Gas Pipeline (SCP) . In 2017, the average daily throughput capacity of SCP was delivered to 20.5 million cubic meters .<sup>17</sup>

BTE gas pipeline are in the interests of not only Azerbaijan but also Kazakhstan and Turkmenistan. Thus, these countries plan to transport gas via South Caucasian pipeline in future. In addition, according to the agreement signed between Turkey and Greece, an agreement was signed on the construction of a gas pipeline from Ankara to Komotini. It paved the way for the transportation of gas from "Shah Daniz". to Greece, Italy, the Balkans and other European countries along with Turkey

As already noted, the Southern Gas Corridor project is created for entering of the rich natural gas resources to the world markets. It is this fact, the greatness and

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<sup>17</sup> [www.socar.az](http://www.socar.az)

importance of the "Shah Daniz" field are in front of eyes once again. "Shah Daniz" gas field is considered the largest exploration of BP after Prudo Bey oil field".<sup>18</sup>

Shah Daniz field was discovered in 1999. This field is one of the largest gas fields in the world. It is located on the shelf of the Caspian sea which change the sea depth of 50-500 m , in the south-east of 70 km from Baku. BP company put the Shah Daniz field to use on the behalf of the partners of The Shah Daniz Production Sharing Agreement (PSA). The operations on Shah Daniz Stage 1 began in 2006. About 10 billion cubic meters of gas per year and 50 000 barrels of condensate per day is the maximum production on stage 1. In 2014, further technical optimization of the Shah Daniz facilities rised the maximum daily capacity of the production system from 27,3 million standard cubic meters to 29,5 million standard cubic meters. In 2017, the Shah Daniz field continued to deliver gas to the markets of Azerbaijan (to SOCAR), Georgia (GOGC company) and Turkey (BOTAS company). It should be noted that the gas export is implemented via the Baku-Tbilisi-erzurum gas pipeline according to the Shah Daniz Stage 1. During the year, 10,7 billion standard cubic meters of gas and 2,5 million tons (about 20 million barrels) of condensate produced from the field. The current daily production capacity of the Shah Daniz facilities is 30 million standard (about 10,9 billion per year) cubic metres. Since the start of production at the Shah Daniz field, about 80 billion standard cubic meters of gas condensate was reached.<sup>19</sup>

Shah Daniz Stage 2 or Full-Scaled Operation of the Field is the large project which will produce 16 billion cubic meters of gas in addition to the annual 9 billion cubic meters of gas produced from Shah Daniz Stage 1 project.

Approximately 28 billion USD is needed for the production and for the delivery of gas to the Georgian-Turkish border. From this time, additional pipeline systems will

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<sup>18</sup> [www.bp.com/az](http://www.bp.com/az)

<sup>19</sup> [www.enerjienstitutu.com/tr](http://www.enerjienstitutu.com/tr).

bring 6 billion cubic meters of gas route to Turkey and 10 billion cubic meters of gas to European markets via the route of the Southern Gas Corridor. Shah Daniz gas will be transported through the distance of 3500 km and up to the width of 2500 meters and 800m on the seabed.

Current concept of Shah Daniz Stage 2 includes the following:

- Building of two sea platforms connected with bridge
- Drilling of 26 gas production wells through 2 half-diving machines
- Building of the underwater pipelines with the length of 500km that will join the wells to the terminal in the cost
- Modernisation of the ships that carry out the building in the sea
- Broadening of Sangachal Terminal in order to place the new gas output and compression

As already noted, the implementation of the Southern Gas Corridor project requires the construction of a new pipeline expansion, as well as the expansion of the existing infrastructure. The first step in this direction is the expansion (expansion of SCP CQBKG project) of the South Caucasus Pipeline in the territory of Georgia and Azerbaijan.

In 2017, the issues on the project of Expansion of the South Caucasus Pipeline continued successfully along the route of the pipeline in Azerbaijan and Georgia. 99% of the first volume of this work intended for already completed. The construction of the main pipeline work has been completed in Azerbaijan and Georgia. Now the main attention is directed to complete the consolidation and hydro-tests as part of Azerbaijan. Hydrocarbon included in the control-station located in Georgia on the border with Turkey, in the Georgian section of the pipeline and in the first compressor station safely. The control station is now fully operational and the

first object announced that is ready for operation on the Southern Gas Corridor. Now the main attention is directed to complete the operation works safely for the preparation of the operating of the first compressor and the building of the second compressor station and operational testing.

Expansion project of the South Caucasus Pipeline is part of the Full-scale Development project of the Shah Daniz Field. The construction of a new pipeline through Azerbaijan and Georgia is expanded to include construction of two new gas compressor stations. This will lead to increase the volume of gas three times exported through the pipeline annually 20 billion cubic meters. The pipeline in the border of Georgia-Turkey will reach gas to Turkey and Europe with joining the other pipeline.

Especially the year of 2017 was very successful for Shah Daniz 2 project along with the South Caucasus Pipeline Expansion project. The issues were carried out on the construction, operation tests and the delivery for both projects and it has been spent 45 million of individual/work hours. Currently, this project has entered the stage of operating schedule for the first gas in 2018. Already 99% of the volume of the work required for gaining the first gas has been completed for the Shah Daniz 2 project including engineering-project works, supply, construction and operating tests.

The new flagship vessel of Caspian Sea, Khankendi was put into operation on September 6. This offshore construction vessel associated with the latest technical developments is designed and built in order to construct the biggest offshore production system in the Caspian sea within the framework of Shah Daniz 2 project. President of the Republic of Azerbaijan Ilham Aliyev attended in the official opening ceremony of this new ship that worth \$ 378 million in Baku. Khankendi ship already is in the territory the Shah Daniz field in the sea and it has been carried out the subsea installation and construction work there.

Construction of both of upper modules of the platforms on Shah Daniz 2 project in 2017 were completed. These devices were sent safely and were installed in the sea, and currently operational tests continue. The expansion work is completed on ShahDaniz 2 project in the Sangachal terminal . Currently the operation tests of the devices continue on the Shah Daniz 2 project, and the works continue successfully according to the operating plan in this year, and it should be ready to receive and process the further gas volumes from the production Shahdaniz 2 project.

The production of Khankendi has completed the installation of technological equipment cablest supporting submarine in the northern side. The underwater lines leading to Sangachal terminal, wells,subsea infrastructure, Shah Daniz 2 platform and terminal were connected with each others at the first time.

More than 24 000 people which more than 80% of the citizens of Azerbaijan involved the works on all major contracts in the midst of the construction work on the expansion of.Shah Daniz 2 and the South Caucasus Pipeline totally.

One issue should be mentioned that during the implementation of all of the issues within the project, especially in the process of laying of the pipes, it has been paid attention on the minimum damage to the environment and the preservation of the natural landscape features within the framework of international norms.

## **2.2 The current state of TANAP and TAP international export pipelines**

The second part of the "Southern Gas Corridor" project- TANAP(Trans-Anatolian Natural Gas Pipeline) which is one of the most prestigious projects of its period, and one of the most important project for two brotherly countries-Turkey and Azerbaijan who carried out the projects in energy sector successfully like in all spheres has an important role in the world energy sector. Also it has paramount importance for the world energy sector. As a result of long term investigations and negotiations, the project was announced by the President of SOCAR, Natig Aliyev project at the

THIRD Black Sea Energy & Economy Forum held in Turkey on 17 November 2011. As a continuation of it, the realisation of this grand project was official by signing a Memorandum of Understanding on December 26, 2011 and the Intergovernmental agreement on June 26, 2012.

According to the signed Memorandum of Understanding, agreement was reached on



beginning of Trans-anatolian pipeline construction soon and on establishing joint consortium of companies appointed by the name of the two countries. The first members of the consortium that will be founded were State Oil Company of Azerbaijan Republic (the SOCAR), Anonymous Company of Petrol Transportation from Turkey (BOTAS) and Türkiye Petrolleri Anonim Ortaklığı (TPAO). Also during the project, there is an attention on that other international oil and natural gas companies might be partner of the consortium.

**Figure 3. TANAP international pipeline**

**Source: [www.tanap-seip.com](http://www.tanap-seip.com)**

Turkish Prime Minister Recep Tayyip Erdogan and with the direct participation of the President of Azerbaijan Republic Ilham Aliyev, Turkish Minister

of Energy and Natural Resources Taner Yildiz and Azerbaijani Industry and Energy Minister Natig Aliyev signed an Intergovernmental agreement consisting of 15 articles on June 26, 2012. According to the agreement, the share of the State Oil Company of Azerbaijan on the project is 80%, and the share of the Turkish companies is 20% together.<sup>20</sup>

At the end of November 2016, the head of the Trans-Anatolian Gas Pipeline (TANAP) project Saltuk Duzyol mentioned that the project has already completed 55% of work and it moved before the calendar: "I hope 2 billion cubic meters of gas will come at the end of June 2018 as the first section of gas that Turkey will receive 6 billion cubic meters of. Now we decrease the first investment cost of TANAP defined as 11,7 billion dollars to 8,5 billion dollars".

It should be noted that the reduction of investment spending for the Turkish side is because of the dropping process in oil prices. It is obvious that although this case is unfavorable for oil-exporting countries, including Azerbaijan, so it is advantageous for countries like Turkey carrying out the purchase of oil. In December 2016, Saltuk Duzyol and other authorized representatives of TANAP have acquainted with the last construction works in the walking presentation of the project organized in the field of "Sakarya Keçişi Nehir" and "Polatlı Kampı".

It is already known that it has been dugged a ditch in the part of 1570 km of pipelines, the pipelines were welded and paved in the part of 1200 km of the pipeline which has the total length of 1850 km.

During the walking Saltuk Duzyol said that it has been given the gravity to the first 3 lots of TANAP with totally 4 separated components and one sea crossings built and from the border of Georgia to Eskisehir.

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<sup>20</sup> [www.ntv.com.tr](http://www.ntv.com.tr)



Eskisehir, Turkey is seen as a key project for starting point. In fact, Turkish side have built the pipeline that has the largest size in Europe by using the pipes with 56 inch diameter. As we know, TANAP is in the middle of 3500 km pipeline in fact. The beginning of it consists the expanded form of the South Caucasus pipeline and the end of it consists about 700 km of pipeline of TAP.

It should be mentioned that about 28 billion dollars of the project that worths 45 billion dollars are used to work on the excavations of Shah Daniz 2 field in our country. TANAP will be built through pipelines to measure 48 inches to the part - Eskişehirden the Turkish-Greek border. It has been considered to construct the sea transition of 19 kilometers with two pipelines of 36 under the strait of Canakkale (the Dardanelles).

Azerbaijani gas will increase its share in Turkey through TANAP , the Duzyol continued his statement:

"As i said, we will provide gas to Turkey in 2018. In the first year, 2 billion cubic meters of gas , and in the later years 4 billion, and 6 billion cubic meters of gas will be delivered. This situation, taking into account the needs of the Turkish natural gas agreements reflected in this form. Our pipeline is being built within the framework of 15 years of gas transportation and will be commissioned. In general, the transportation tariff has already been defined. So, investments are provided with a capacity of 16 billion cubic meters of gas from workflows of the pipeline. In the following years, it will be brought up to 24 billion cubic meters and then to 31 billion cubic meters " .

Currently, Turkey is implementing an annual consumption of 40-45 billion cubic meters of natural gas . The speed of growth of the demand moves less in comparison with the previous 10 years and the total portfolio of kontrat is 52 billion cubic meters and this portfolio will rise to 58 billion with 6 billion cubic meters of gas that will be

bought by TANAP. In addition, Turkey will also have the opportunity to import 15 billion cubic meters of gas in the long-term period.

10 billion cubic meters of gas is planned to be submitted to the buyer on June 9, 2019 that will be transported to Europe in the first phase by TANAP which includes 58/100 of SOCAR, 30/100 of BOTAS and 12/100 of BP.

The first lot of the pipeline is being built by Turkey Fernas company and the second by Sicim-Yüksel-Akkord company and the third lot by Tekfen Construction company in Turkey. It should be noted that, as 80/100 of TANAP pipes is produced by 6 different pipe firms, 20/100 of them is imported from China.

Tekfen Insaat working in the field of Lot 3 finished 60 percent of the part 55 days before that was planned to be completed at the end of January in 2017. Other companies also continue to work to complement its target of 60 percent completion.

It should be noted that, 99 percent of the part of TANAP pipeline up to Turkey has already been completed. The general meeting of the members of the Board of TANAP was held in Ankara, in March 2018. The members of the Board were informed about the work done on the first phase of TANAP which is already completed. It was noted that the first phase completed about 99% of the work until the Turkish region of Eskisehir. About 80% of the work was carried out to Europe. Totally more than 93 percent of the work on the project was completed. Currently, work is continuing on the preliminary schedule, taking into account all the construction quality and precision.

Chairman of the board of TANAP, SOCAR president Rovnag Abdullayev said: " 6 billion cubic meters of gas will be exported to Turkey via TANAP from the second half of this year, as originally planned. All parties should fulfill their duties with

responsibility in order to complete the construction works in accordance with the schedule for timely and with high quality".

We should remember that, firstly 6 billion cubic meters of gas will be transported to Turkey in 2015 by TANAP which is 1850 km, and the total throughput capacity of TANAP pipeline joining the TAP pipeline will reach to 16 billion cubic meters. And on the next stages, throughput capacity of the pipeline can be reached to 31 billion cubic meters.

While the construction on TANAP pipeline continues rapidly, the social and natural impact on the environment, the requirements for worker health and work security in the international standards are taken into account at the highest level.

TAP pipeline (Trans Adriatic Pipeline) represents as the third part of the project which carries out transportation of gas from large Shah Daniz 2 field in Azerbaijan to Europe. The pipeline with the length of 878 km will build the connection with the Trans Anadolu pipeline at the Turkish-Greek border, and will end in Italy crossing through Albania and Greece. It should be noted that the financial value of TAP pipeline is worth 4,5 billion euros. The length of the pipeline is 550 km in Greece, 215 km in Albania, 105 km under the Adriatic Sea and 8 km on land territory of Italy.

Nabucco was the main project on the agenda before choosing the Trans Adriatic pipeline project. This project provides the transportation of Azerbaijani gas to Central Europe through Turkey, Bulgaria and Romania. However, according to the joint decision of BP, Statoil and SOCAR, the door opened to Europe via TAP. Although various considerations are made related to the cancellation of the Nabucco project, the major economic reasons are the high prices of natural gas in Italy and Greece and financial requirements of Nabucco project.

**Figure 4. TAP international pipeline**



**Source: [www.snam.it](http://www.snam.it)**

The transition of TAP can provide gas supply to many South-East European countries including Bulgaria, Albania, Bosnia-Herzegovina, Croatia and others. As well as a network of gas supply of Italy related to the European Union countries opens up great opportunities for access of Caspian gas to the markets of countries such as Germany, France, Switzerland and Austria ..

BP (to 20%), SOCAR, (to 20%) Snam (italian 20%), Fluxys (Belçika-19%), Enags (Ispaniya-16%) and Axpo (Switzerland-5%%) participate as the partner of TAP.

The length of the pipeline is 878 km (Greece--550 kilometers, Albany-215 kilometers, Adriatic sea-105 kilometers, Italy-8 kilometers), the diameter is 48 inches (underwater part-37 inches). The lower part of the pipeline will cross at the depth of about 820 meters above sea level, and the best part will move from a height of 1800

meters of Albanian mountains. Until 2020, the expenditures of project of Azerbaijani companies is expected to be 1,2 billion dollars.

The construction of TAP continues rapidly in Greece, Albania and Italy as the last step of the exit of Azerbaijani gas to Europe.

The Greek officials said that they are very pleased to announce the progress of the construction in Greece where the main part of the The Trans Adriatic pipeline located due to the program. After the opening ceremony held in may 2016, the significant progress was shown in the construction of the pipeline in the following ten months. The Greek side passing through 550 km part of the pipeline is already being considered to complete the following steps in march 2017 :

- It has been received 66 percent of 32 000 pipes needed for the construction of the pipeline ;
- The ditch was dugged in the distance of 260km ;
- 217 km of the pipeline was set to the pit;
- The pipeline has been already welded in the 184 km section of the main line;
- 18 km of territory brought again the case before.

The head of the project of Greece Rickard thanked for the company and workers who implement the construction and congratulated them and he stated that the progress of the construction is on time during his visit for looking over the construction of the pipeline directy.

It shoud be noted that this activity is not only for the construction of the pipeline, also has a positive impact on the economy of the regions where the country and the pipeline cross in all countries in which the activity goes on related to the Southern Gas Corridor project. Thus, up to this day, more than 2500 workers, more

than 400 archaeologists and specialists were operating in Greece during the construction.

The project have offered great opportunities for many local companies and entrepreneurs in the period of a deep crisis in the economy of Greece. In general, currently 176 greek companies involved in different forms in a project, and also continues to benefit from the rich experience and financial opportunities. Also, the project manager of Turkey Saltuk Duzyol said that within the framework of this project, 10000 workers involved in the works directly or indirectly in 20 different regions in Turkey, drawing also special attention to this issue. At the same time, TANAP opened the door for the new work alternatives to many industry and trade companies including small and medium-sized businesses in this region.

In august 2016, the foundation of TAP was made in Albania where there is a need for 215 km of the pipeline. 7 months after the construction of the Trans Adriatic pipeline (TAP), Representatives and the diplomatic representatives of the embassy of twelve countries in Albania visited to Ura Vajgurore in the Berat region in which the construction continued, in order to look over the recent view of the construction of the pipeline. During the walk held on march 7, 2017, the representatives of TAP including the authorized representative of the Ministry of Foreign Affairs of Albania Ulrike Andres and project manager of Albania Shkelqim Bozgo met the construction outlook and the construction predictions that will continue during 2017.

If we pay attention to the latest situation of the construction in Albania, we can see the completion of drilling of the pits in more than 72 km of part. Besides, laying of pipes in 62 km and welding of the pipeline in 52 km were carried out. The process of filling the pit has already completed in the distance of 40 km. We should note that, the top of TAP (1800m) are located at the Albanian mountains .

More than 1700 employees worked in the construction of the segment of the TAP in Albania up to day, and 84% of of them was the local population. Also, a number of roads and bridges connecting the remote villages with the city center were updated within the framework of this project because of the activities carried out. Along the route of TAP, a number of schools have been reconstructed, the activities are done to promote tourism and broad opportunities are opened for local entrepreneurs and small companies.

TAP will cross the Adriatic Sea between Fier In Albania and the southern region of Italy Puglia in the shortest distance of 105 km. The choice of this route was also carried out taking into account natural features of the bottom of the Adriatic sea and serious conditions of environment protection. Laying of the pipeline in the deeper part than 800 meters is made by the latest technology used widely. The underwater pipeline is built considering the stream of water by tracking the S-shaped curvature and steel lay with 20-34 mm is welded in the distance of 12 km depending on the depth. The pipeline is covered with concrete in order to protect it from external influences in the parts that is shallow than 300 meters.

The deepest point of pipeline under the sea level in the Adriatic sea in the strait of Ontranto is 820 m.<sup>21</sup>

Laying of 8 km of part of TAP in the land part of Italy faced with some difficulties. Thus, the presence of the olive garden in the part of the pipes from the sea to the land has caused protest of some public organizations related to the protection environment. Even for this reason, it has been appealed to the local courts and therefore the construction of TAP suspended for some time. But then the State Council of Italy gave official permission for the construction of the TAP pipeline. It should be noted that the State Council is considered the administrative court which

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<sup>21</sup> Azerbaijan: The new address of the energy”, *Deutsche Welle Türkçe*, 10 Mayıs 2014.

have the highest authority and the earlier decision of the local court is already cancelled.

After the permission of the construction of TAP, the construction works began to continue since march of this year.

1,5 km of micro tunnel is laid in the part where the pipeline crosses to the land from the Adriatic sea, and it makes the pipeline invisible and provides minimal damage to the environment. For the implementation of the activity, transportation of nearly 231 olive trees and return of them after the end of the construction.

The implementation of the "Trans-Adriatic" (to FIND) gas pipeline project that will transport Azerbaijani natural gas to Europe is in more intensive phase. Thus, according to information for the beginning of march, 2018, 70 percent of the pipeline is brought down in the route of Albany of the "Trans Adriatic" (to FIND) pipeline that will transport Azerbaijani natural gas to Europe.

TAP AG company which is the operator of the pipeline share information about it. It has been reported that although the weather is cold in the South East Europe, the construction work of the pipeline continue according to the schedule. 150 km of pipes was brought down the pit in 215 km of Albanian part of TAP.

We should mention that, the Administrative Personnel of the European Investment Bank has approved for financing of 1,5 billion euros for the TAP pipeline broading to the coasts of the Southern Italy in order to join the natura gas network of Itay crossing through Greece, Albany and AdriaticSea on february 6, 2018. The bank said that the project is part of the Southern Gas Corridor and energy policy of the European Union is the initiative prescribed by the Council of Europe, the European Commission and the European Parliament as an important component of the strategic framework.



It should be noted that the European Bank for Reconstruction and Development also (EBRD) plans to provide a loan up to 1,2 billion euros for TAP. 500 million euros of this amount will be in the form of direct loan by the EBRD and 700 million euros will be syndicated loan. Until the middle of this year it is expected to adopt a decision on the allocation of credit.

Totally 67 percent of the works of the TAP gas pipeline project including the engineering, supplying and the construction. 92 percent of area was cleaned and evaluated in 765 kilometers of the pipeline of Greece and Albany, 615 kilometers of pipes were welded, 67 percent of the pipes was drawn to the pit, 52 percent of the soil was brought to the previous situation. Italian "Saipem S.P.a" company currently carrying out construction of 105-km part of the pipeline that will cross from the Adriatic Sea works in the field of micro tunneling. The temporary road and field training were completed here. The contractor of TAP work for the drilling of the pit in order to realize the construction of micro tunnel. The workers overcame the 65 million miles of distance and 23 million man-hours of work were made in 3 countries in which TAP crosses. The project is being implemented according to schedule and TAP will be ready to receive first gas from the "ShahDaniz" field in Azerbaijan until 2020.

TAP consists a segment of the "Southern Gas Corridor" that is the priority energy project for the EU and the total cost of the project will be 4,5 billion euros. It also included the design and engineering work which lasted since 2009. "Shah Daniz" consortium will implement the first gas sales to Georgia and Turkey in 2018. The supply of the first gas to Europe is expected nearly after 1 year, in early 2020.

The construction of two compressor station-one of them is in the east of Greece-in Kipoi and second is in the west of Albany- in Fier with the annual capacity of 10 billion cubic meters for the preliminary project is continued to build related to the schedule. Along with the compressor stations, the building of the measuring station is

carried out in east of Albany, near to Bilisht region. Construction of the compressor and measuring station will be completed in about two years. After that the the preparation of the initial operation, and the tests for putting into operation will be conducted on. Turbo compressors are required for TAP gas pipeline were produced by "Siemens" company. The sea section of the pipeline will be built in 2018-2019.

The TAP project which is the component part of the "Southern Gas Corridor" with the length of 3 thousand 500 km and will transport gas produced from "ShahDaniz-2" field in the Azerbaijan sector of Caspian sea to Turkey and from there to Europe was the continue of South Caucasus Pipeline and TANAP, and it considers to transport of gas produced in "ShahDaniz-2" to the south of Italy and from there to the Western Europe crossing the Adriatic Sea through Greece and Albany. The TAP pipeline will connect with TANAP and will start from the territory of Kipoi located on the border of Greece with Turkey. From there the TAP pipeline overcoming the territory of Greece and Albany will be directed from east to west to the coast of the Adriatic sea and come ashore in the region of Italy, Puglia. The pipeline will connect to the gas transport network of Italy operated by "Snam Rete Gas" company. This project creates great opportunities for the supply of Azerbaijani gas to the great European markets such as Italy, Germany, France, UK, Switzerland and Austria. The first capacity of TAP will be 10 billion cubic meters per year and this capacity is planned to increase up to 20 billion cubic meters in the future. The president of SOCAR Rovnag Abdullayev expressed the importance of the "Southern Gas Corridor" project in his speech: "Transportation of natural gas from the Caspian sea to Europe is just a step away. And we are waiting to build sustainable cooperation with our european partners. The direct financial contribution of European Investment Bank to TAP shows again the importance of the Southern Gas Corridor in terms of the energy security. The total amount of investments put together up to day is 29,7 billion USD. Azerbaijan has invested in the amount of 8,7 billion USD to finance 4 projects included value chain of the corridor as the example of "Southern Gas Corridor"

CJSC. Work continues on schedule and the project will be completed in time. We already begin to the operation of the Azerbaijan, Georgia and Turkey part of the Southern Gas Corridor. The first volume of natural gas is expected to bring to Turkey for commercial purposes in middle of 2018".

As it has been shown, according to the Southern Gas Corridor project, the construction work and other aspects of the activities continue with the latest acceleration.

### **2.3 The evaluation of “Southern Gas Corridor” in terms of its impact on the economic development of Azerbaijan**

The purpose of the "Southern Gas Corridor" project which is considered alternative energy source and the most popular in the energy market is working on the second phase of the operation of the "Shah Daniz" gas condensate field, ensuring the export of the produced natural gas to Turkey and Southern Europe via broaden the South Caucasus Gas Pipeline and build TANAP and TAP gas pipelines.

With the participation of the officials of relevant agencies of several countries and highly authorized representatives of the relevant organizations of EU, the next fourth meeting of the Advisory Board of the "Southern Gas Corridor" was held at the Heydar Aliyev Center on 15.02.2018. President Ilham Aliyev called the "Southern Gas Corridor" as the miracle of the XXI century, speaking about the importance of the project, the construction works in the meeting, noted that Azerbaijan has prepared a solid foundation for the development of mutually beneficial relations with the European Union in the field of energy security in wider range: The "southern Gas Corridor" opened the way for many benefits for our country. Azerbaijan aimed at its resource to the development of human capital, the creation of new jobs and diversifying of the economy ". As in the previous meeting, it has been spoken about the international and transnational importance of the "Southern Gas Corridor" at this meeting. It was noted that the "Southern Gas Corridor" built according to the

diversification of the energy projects of Azerbaijan and being the biggest project carried out by our country will increase the opportunities of the energy supply of the European countries and will lead to diversify gas supply sources and to use new alternative routes. It was noted that strategic importance and the role of strengthening of mutual cooperation between the countries for this project which has special importance in ensuring the energy security is greater.

At the meeting, the vice-president of the European Commission on the Energy Community, co-chairman of the Advisory Council Marosh Shefovich stressing the importance of the project that will change the energy map of the world for the continent countries noted: the capital allocated for financing of this project by "European Investment Bank" (ADB) was the highest price which is allocated for a single project in the history of that bank".

It should be remembered that ADB approved a loan of 1,5 billion euros in the construction of (to FIND) the Trans Adriatic Pipeline, designed to transport gas to Europe on february 6 of this year. In all meetings, the most attractive and important thing is the words about the energy security of the "Southern Gas Corridor" which will benefit to the producers, transit countries and consumers in the coming ten years, will change the energy map of Europe, and spent more than 40 billion dollars.

Azerbaijan is an important step towards the implementation of TANAP and TAP projects, which is another successful implementation of the oil strategy of Azerbaijan, its economic independence leads as the issues discussed in the world energy market as energy diplomacy. The following success of Azerbaijan-TAP and TANAP projects keeps it actuality as the issue discussed in the world energy market as the important step towards the implementation of the "Southern Gas Corridor".

the "Southern Gas Corridor", TANAP, TAP projects emerging from growing demand is the expression of the determination of President Ilham Aliyev, and is the result of policy of Azerbaijan becoming a transit country. These projects will allow

maximum transporting of Azerbaijani gas to Europe, strengthening its position as investors, and expanding the potential of the diversified export. These projects are considered as one of the significant projects for Azerbaijan and for the region. Of course, such projects are not limited only with the countries of the region, but also European countries are among the countries that reap the benefit from these projects.

TANAP will increase the number of those interested in energy projects, strengthening Azerbaijan's position in the global energy market. From this point of view, TANAP attracts the attention as quite important projects from the first. The implementation of the project will increase the flow of investment into the country, the financial situation of our republic will be accelerated. At the same time, the project will strengthen the political authority of our country, will make intensive the integration of gas to Europe, and will be different in energy security of the continents. From the other point of view, as TANAP is an economical project, it will play an important role in the economy of the country. The dividends that will be brought by the project to Azerbaijan will have a great impact on the development of the economy of our country and the partner countries of the project. The using of TANAP and TAP projects by the other countries will make a high-ranking economic power centers of Azerbaijan in the region once again.

### **Conclusion**

Natural gas reserves participate as the main means of the integration of Azerbaijan into the world market as an oil reserves. The correct assessment, management and effective use of the potential for socio-economic development of the country has a very important role in international economic relations. However, the current construction of the world market confirms once again that it will not be easy to work and to gain the success in this field.

Currently, the level of gas production in Azerbaijan changes according to the domestic demand, level of export quotas, as well as, the current situation of the international market of the country. In general, the level of gas production increased significantly in the last 10 years. The availability of the opportunities related to the growth of gas extraction and efficient use of natural resources can be possible on the basis the available, discovered and not-fully operated and even possible discovery of deposits. The ongoing investigation and researches prove the possibility of it.

Natural gas export of Azerbaijan is implemented within the framework of the existing agreements, infrastructure and opportunities continuously. In addition to that, our country signed the regional and globally important projects in order to increase additional gas export potential and the implementation of them is rapidly continued at present.

The large-scale operations implemented within the framework of the grand international gas pipeline project -the "southern Gas Corridor" and the preliminary results represent as the informer that ensures the expected success of this project. As BTE operates from the giant project consisted 3 parts (BTE, TANAP and TAP), the construction of others continue in all countries according to the schedule and it is not expected any problem or delay. Indirectly within the framework of "Shah Daniz Stage 2" transport of gas from Azerbaijan to European markets are already become reality almost in few days. However, there is an undeniable reality that the level of prices for natural gas is changable in the global market. Although these price levels don't prevent the implementation of the project, the high levels of the prices may extend the restoration duration of the project by reducing the amount of the income. Thus, according to the report of the World Bank and the International Energy Agency, gas prices will drop by 30-60% in the world in the following 3 years.

The decline of the prices of gas is not only related with the cheapening of oil, the main reason is the increase of the natural gas offer by the companies engaged in

the new, large gas production and export in the world and the easy character of the gas transportation due to transportation of gas by tankers. Transportation of compressed gas by tankers increases the mobility of gas supply, cuts the transit costs and gas supply and also assures the political risk that occurs or can be occurred in the countries in which the pipe crosses. The decrease of gas prices has already began, for example, an average price of gas sold by one of the main gas exporter of the world- Russia to Europe was 387 dollars for per 1000 cubic meters in 2015, the price is to be cheapen up to 302 dollars in the long-term agreements, in the following 3 years. The average price of gas that will be sold by Russia to China after 2018, will be 256 dollars for per 1000 cubic meters. If the natural gas hegemony of the world market Russia plans to sale of gas with such prices, it is already alarm for the market.

Japan buy the most expensive gas of the world -600 dollars for per 1000 cubic meters of gas, but the agreement was reached between Japan and Australia, Japan has began to buy gas from this country via new generation of tankers, and the first price varies between 400-450 dollars.

At present, the great importance is tended to the attraction of the new shareholders to reduce the excessive spending and distribution of the risk within the framework of Azerbaijan Southern Gas Corridor. Otherwise, the TANAP and TAP projects worth 48 billion dollars may not become profitable a long time. Although being profitable of these projects has great importance for our country in recent years that there is a sharp decline in oil prices.

Also Azerbaijan can be operated to transport Iraqi gas to Europe by using its transit role usefully within the framework of these projects. The high proportion of income and also the rich experience of TANAP and TAP allow it. It can be possible to bring more benefit and to become the projects more profitable for this reason.

It may be noted as the offer that Azerbaijan could use its transit position in the transportation of Turkmen gas to Europe. Trans Caspian pipeline is planned for it, but

it is not easy to implement it in a short period. This issue participate as the problematic issue either from the political side, or from the financial side, and it shows that this issue will not find its solution for a long time. Instead, Azerbaijan could implement the transportation of compressed gas by tankers with Turkmenistan by using the world experience. The basic infrastructure exists almost to do that. Thus, Azerbaijan builds shipbuilding plant, he is able to produce the compressed small-sized gas tankers that can float in the Caspian Sea in the new shipbuilding plant in Alat by involving the experts, new technologies from Japan and South Korea which has an exceptional experience in this area. Thanks to it, the transportation of Turkmen gas to Azerbaijan and from there to Europe may be possible without the pipeline. In this case, Turkmen gas will join to The TANAP and TAP projects, and it will increase the profitability and importance of the project and will bring it more favorable to Europe.

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