THE ROLE OF AND GAZ RESOURCES IN ENUSIRING SOCIO-ECONOMIC DEVELOPMENT OF THE REPUBLIC OF AZERBAIJAN

İbrahimova S.
Associate Professor of Odlar Yurdu University, Baku, Azerbaijan
Orujov M.
Honorary Professor of SMBS (Swiss Montreux Business School), Odlar Yurdu University, Baku, Azerbaijan
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Abstract

The article is devoted to the analysis of the role of oil and gas resources in ensuring sustainable socio-economic development of the Republic of Azerbaijan in light of changes in the world oil market. In recent years, the economy of Azerbaijan has continued to grow against the backdrop of complex processes in the world economy, demonstrating stability and sustainability. The implemented economic reforms allowed us to adequately respond to the risks and problems of the potential external environment. As a result of the successful policy, the resource potential of the fuel and energy complex of the Republic of Azerbaijan has become an important factor in sustainable economic development.

Keywords: oil and gas, oil production, oil and gas complex, oil producing sector, oil and gas market, foreign trade, fuel and energy products, resource base.

The structure of the economy of most countries in the world is such that the most important for their development and at the same time the main polluters of the environment are the fuel and energy sectors. Therefore, the use of fuel and energy resources largely determines environmental and economic sustainability.

Currently, from the point of view of domestic and foreign economic interests of Azerbaijan, the most important fuel resources are oil and gas. Oil and gas are not only a source of fuel (gasoline, kerosene, fuel oil) and electricity, but also raw materials for the chemical industry. The republic's petrochemical enterprises supply the national economy with such products as fertilizers, rubber, synthetic fibers, plastics and many others.

At the same time, oil has been the main export commodity for the Republic of Azerbaijan for many years, as well as an important geopolitical factor. Suffice it to say that of the five Caspian states, Azerbaijan remains the most attractive to transnational companies seeking to gain access to the vast energy resources of the Caspian. This is largely due to the fact that the Baku offshore fields are located under a relatively small thickness of water, which makes it easier and cheaper to extract oil than anywhere else in the Caspian [1 p. 115].

The development of the oil industry has contributed to the rapid development of infrastructure related to oil production, its processing and transportation. According to experts, for every person employed in oil production, there are 4-5 people employed in related industries. In total, approximately 30% of the working population of the republic is currently associated with the oil and gas complex.

The expansion of the volume of work in the oil and gas sector directly affects the state of affairs in the construction sector of the economy, transport, infrastructure, and ensures investment activity. Suffice it to say that more than a third of all capital investments have been directed to the fuel complex of Azerbaijan in the last decade. If we compare capital investments in the fuel industry with investments in the sphere of material production (excluding expenses on housing and communal services, education and medicine), we can state that the oil and gas industry consumes more than 70% of all investments in the country.

The rapid growth of world oil prices in 2009-2013 contributed to the further growth of the importance of the oil sector in ensuring the socio-economic development of the Republic of Azerbaijan. On the wave of high oil prices, Azerbaijan received significant foreign exchange. In 2010-2013 alone, the country's international currency reserves increased 2.8 times, exceeding $ 15.176 billion.

Thus, the development of the oil and gas industry is an important financial lever for raising the entire economy of the Republic of Azerbaijan. The development of the oil and gas complex is a guarantee not only of the inflow of funds, but also a significant factor in ensuring the sustainable development of the Republic of Azerbaijan [6 p. 55].

Since today the oil and gas resources of Azerbaijan, their prospective development and exploitation are not only a condition for the sustainable development of the national economy, but also one of the significant factors of world geopolitics, it is appropriate to consider the oil and gas resources of Azerbaijan against the background of world reserves of these strategic resources.

Proven recoverable world oil reserves amount to 238.2-270 billion tons, which, with the stabilization of its world production at the current level (about 4.1302 billion tons per year), will lead to the depletion of these reserves only in 58-65 years. Undiscovered (predicted and probable) oil resources are currently estimated at another 300-350 billion tons, which is equivalent to another 73-85 years of its consumption [2 p. 25].

The identified oil reserves are distributed extremely unevenly across the continents. The leading place belongs to the states of the Persian Gulf region: Saudi Arabia (15.8% of world reserves), Iran (9.3%), UAE (5.8%), Iraq (8.9%), Kuwait (6.0%). In other regions, the largest confirmed reserves have been established in Venezuela (17.7%), Libya (2.9%), China

(1.1%), the USA (2.6%), Nigeria (2.2%), Norway (0.5%). Russia (5.5%) and Canada (10.3%) have large oil reserves [270].

For all mineral resources, an important indicator of their economic significance is their endurance indicator, which shows the number of years that the resources of a given type will last if the current rates of their extraction and use are maintained. In general, for the world economy, as noted above, this indicator is about 70 years for oil. The endurance of the main oil-producing CIS countries is given in Table 1.

Table 1

Proven oil and gas reserves in the CIS countries and in the world, 2023

	Oil production, million tons	**Share of world, %**	**Proven, reserves, billion tons**	**Frequency, years**	**Gas production, billion m3**	**Proven, reserves, trillion m3**
World as a whole	4130,2	100	238,2	53,3	3369,9	185,7
including:						
Azerbaijan	43,4	1,1	1,0	21,9	29,2	0,9
Iran	166,1	4,0	21,6	130,2	166,6	33,8
Kazakhstan	83,8	2,0	3,9	46,0	18,5	1,5
Russia	531,4	12,9	12,7	23,6	604,8	31,3
Turkmenistan	11,4	0,3	0,1	0,1	62,3	17,5
Uzbekistan	2,9	0,1	0,1	0,1	55,2	1,1
Ukraine	*	*	*	*	19,3	0,6

Compiled by the author based on: BP Statistical review of world energy 2023. Statistical indicators of Azerbaijan - Baku, 2024. - 812 p.

The Republic of Azerbaijan is one of the oldest and largest oil producers in the world, as well as a major net exporter of this strategically important raw material to the world market. Explored oil reserves are estimated at 7-10 billion barrels [5 p. 124].

Azerbaijan's share in world oil reserves is 0.4%. The republic accounts for 1.1% of world production and 1.0% of world oil consumption. At the current level of oil production and consumption, the Republic of Azerbaijan, according to experts, will have enough reserves for 21.9 years. A total of 69 fields have been discovered in the country, including 27 offshore. 61 fields are in commercial operation, 21 of which are on the offshore shelf.

The largest oil field is located in the Caspian region and includes Azeri-Chirag-Guneshli (ACG). The volume of reserves is 5 billion barrels of oil (or 740 million tons). ACG accounts for 0.3% of the world's proven oil reserves. The maximum production level within the ACG project in 2009-2010 was 50 million tons. The leading role in oil production in the Republic of Azerbaijan belongs to marine (offshore) fields - 90%, including a significant part of the deep-water Guneshli field. The very first marine hydrocarbon field in the world was Oil Rocks, the development of this field began in 1949. The main hydrocarbon deposits are presented in Table 2.

Table .2

Main hydrocarbon deposits in Azerbaijan

Name of the deposit	**Year Opening**	**Name of the deposit**	**Year Opening**
Bayil	1923	Bullamore	1975
Oil stones	1949	Gunashli	1979
Karadag	1954	Chigar	1985
Zira KussangiSangacha-liDuvanni	1959	Azeri	1988
Kussangi	1966	Kapaz	1989
Bahar	1968	Shah Deniz	1999
Sangachali-Duvanni	1969		

Compiled by the author based on: According to SOCAR data.

It is necessary to dwell on the problems of development of offshore oil fields in Azerbaijan. The main problems that negatively affect the intensification of oil development and production are:

- complication of oil production conditions associated with the involvement of deep-water areas with

depths of more than 200 m in development;

- absence or shortage of modern equipment and technology for drilling wells and producing oil that

meets world practice and ensures the reliability and safety of work;

- the need for large investments;

- the lack of reliable and effective ways for Azerbaijani oil to enter the world market.

Speaking about natural gas, it should be noted that the initial resources of free and associated natural gas in individual fields may exceed 80% of the total volume of deposits.

Proven recoverable global gas reserves, according to the latest estimates of BP, amount to 185.7 trillion m3, and stabilization of its global production at the current level (about 16.2 trillion m3 per year) will lead to the depletion of these reserves only in 54.3 years. Total initial gas resources are estimated at 436-500 trillion m3, of which about 55 trillion m3 have already been extracted and 180 trillion m3, as mentioned above, have been explored. Thus, undiscovered (predicted and probable) gas resources amount to about 200-265 trillion m3, which will last for another 67-88 years [2 p. 18].

Natural gas resources have been discovered on all continents: 43.2% of their total amount is concentrated in the depths of the Middle East, North and South America account for 4.1%, Africa - 7.6%, Australia and Oceania - 8.2%, Europe and Eurasia - 30.5%. Among individual countries, the leading place belongs to Russia - 16.8%, Iran (18.2%), Qatar (13.3%), Saudi Arabia (4.4%), the USA (5.0%), the UAE (3.3%), Nigeria (2.7%), Venezuela (3.0%), Algeria (2.4%), Iraq (1.9%), Indonesia (1.6%), Norway (1.2%), Australia (2.0%), China (1.8%), Malaysia (0.6%), Egypt (1.0%). In the CIS countries (except Russia), the largest natural gas resources are possessed by Turkmenistan (9.4% of the world's), Kazakhstan (0.8%), Uzbekistan. (0.6%), Ukraine (0.3%). The gas industry of the

Republic of Azerbaijan acquired an independent life with the discovery of the Karadag gas condensate field. Later, other large reserves (gas, gas condensate, gas and oil) were discovered. These are, first of all, Bahar, Bulla-Deniz, Guneshli, Chirak, Azeri, etc. The Bahar field produces more than 40% of natural gas, but its production is declining due to the insufficient rate of drilling of new wells. In 1999, the Shah-Deniz field (600-100 billion m3 of gas) was discovered, which became the largest discovered in the country over the past 20 years.

Currently, proven reserves of natural gas in the Republic of Azerbaijan are estimated at 900 billion m3 [2 p. 40]. The resource base of natural gas is characterized by a high degree of concentration of reserves in certain regions and large fields, which creates good conditions for the production and transportation of gas through pipelines. However, the country still has not developed the infrastructure for its transportation, so most of the associated gas is flared at offshore oil fields.

Effective use of the oil and gas complex potential creates the necessary prerequisites for putting the economy of Azerbaijan on a sustainable development trajectory. It should be emphasized that in the structure of the country's economy, the oil and gas complex has been and will continue to be the locomotive of the economy. It will continue to play a decisive role in ensuring sustainable development. Azerbaijan has no other opportunities for effective development.

Azerbaijan also needs a powerful fuel and energy complex in order to compensate as much as possible for the losses incurred by many sectors of the economy due to the extreme depreciation of machinery and equipment, transport, heating networks, etc. The depreciation of fixed capital elements leads to unproductive heat and energy consumption in the production of virtually any product and provision of services. The presence of a huge number of obsolete equipment that consumes fuel and energy at rates that existed in the West 10-20 or more years ago also acts in the same direction. Experts cite data characterizing the state of equipment in the Azerbaijani industry, which indicate that the average age of fixed assets is more than 20 years, and their technological level lags behind that of developed countries by several generations. The degree of depreciation of fixed assets in most sectors of the Azerbaijani industry is at least 50% and continues to grow. The objective need to maintain a powerful oil and gas complex as the basis for any transformation of the Azerbaijani economy as the main component of economic security stems from its role in the national economic complex of the republic. The oil and gas complex must remain powerful and efficient, given its main function - the main structural component of the Azerbaijani economy, providing energy and fuel to industry, agriculture and other industries [3 p. 95].

A powerful oil and gas complex remains the main structural determining direction of economic development. While Azerbaijan has not yet managed to change the structure of the economy in the direction of increasing the importance of manufacturing industries, the oil and gas complex remains a reliable guarantor of its currency and foreign trade well-being. The oil and gas complex provides 96% of the country's exports and 75% of foreign exchange earnings. Other commodity positions of export are not able to counter the export products of the oil and gas complex. The leadership of oil and gas products in Azerbaijani exports is one of the decisive factors contributing to industrial growth in the country.

However, the importance of the resources and capabilities of the fuel and energy complex, primarily the oil-producing sector and the increase in oil exports as a factor ensuring sustainable socio-economic development should not be overestimated. The function of the oil-producing sector is the extraction of natural matter from geobiocenoses, and the mass of this matter (with any extraction technology, no matter how it is improved) determines a certain insurmountable limit of negative environmental impact, below which it is impossible to go down, and no scientific and technical progress will not only not eliminate, but will not even be able to significantly reduce the negative impact of the production processes themselves in their material (especially energy) aspect. This is one of the fundamental differences between the raw materials sector and the manufacturing industries.

As world experience shows, oil exports, as a source of state budget revenues, are extremely unstable due to strong and poorly predictable fluctuations in world prices. In particular, we note the current situation, when the world price of oil fell from $ 143 per barrel to $ 43.15 per barrel within 5-6 months. In order to counter this and develop sustainably due to oil exports, a very powerful damper is needed, that is, large specific (per capita) foreign exchange reserves (for example, as in Kuwait, Norway, etc.). Moreover, this experience also shows that even significant reserves and stabilization funds are not a guarantee against global financial shocks in the context of modern globalization.

High resilience while maintaining the ability to help other industries and the population make the problem of maintaining the potential of the oil and gas sector a vital task, especially in conditions when the state has firmly embarked on the path of implementing structural reforms. The changes that have occurred in the economy of Azerbaijan, as well as the reorganization of the management of the oil and gas complex industries, have changed the relationship between enterprises, joint-stock companies with city administrations, public groups and the population in matters of preserving the natural environment, reducing the harmful impact on it. The stable operation of enterprises, their development and construction of new facilities largely depend on taking into account the environmental factor, public opinion, and active mutual understanding with environmental supervision authorities.

In the modern Republic of Azerbaijan, the fuel and energy complex remains the most important donor of socio-economic development, which has practically no replacement in the near future. Moreover, the reality is that the low standard of living of the population and the current situation in the industries, transport and agriculture necessitate the preservation of a powerful fuel and energy complex as a donor for the longest possible historical period.

The Republic of Azerbaijan also needs a powerful fuel and energy complex because, as recent years have shown, it has proven to be the most viable industry, despite the huge diversion of funds to provide donor support to other industries. In the context of the global financial crisis (2008-2009), and the recent decline in oil prices (2013-2014) with a decrease in the profitability of the oil and gas complex due to a drop in prices for its products on foreign markets, the oil and gas complex of Azerbaijan has demonstrated high survivability, the ability to quickly mobilize its potential and ensure higher growth rates than other industries.

The negative effect of falling prices could have been reduced if the republic had implemented schemes for creating reserve oil reserves, into which excess oil would go during the crisis years, and vice versa, from which additional export resources would be drawn during the years of favorable conditions.

At present, the opinion is beginning to form that humanity is entering a new period of gradual change in the world's leading energy source. Oil will give way to natural gas in the coming decades. In the period up to 2030, dynamic development of consumption and production of natural gas is expected, significantly outpacing the consumption and production of other energy resources. Demand for gas will grow annually by an average of 2.4% against 1.6% for oil and 1% for coal. As a result, the share of gas in world energy production will increase in 2030 to 27% against 23% in 2000.

Thus, in the foreseeable future, the main problem development of the oil and gas market will not be a shortage of resources as such, but the ability to provide the required volumes of fuel and energy production with the necessary investment resources on such terms that the cost indicators remain acceptable for consumers and attractive for energy producers.

In the current conditions of increasing volatility in the world energy markets and the aggravation of the global energy problem, in our opinion, fuel and energy resources should be considered as special goods that cannot be replaced, the consumer value of which includes ensuring the vital activity of society and socio-economic progress, maintaining energy and economic security.

Moreover, fuel and energy products are goods that accumulate a huge share of the labor of geophysicists, geologists, highly qualified workers in the extractive and processing industries, complex engineering, power engineers, etc. In this regard, one can support the position of a number of economists who believe that energy resources should be given, if not an equal sign with finished products, then a special sign that distinguishes them from raw materials and allocates these goods to a special group in the political economy lexicon.

We must finally understand that developed countries that do not have sufficient fuel and raw material reserves are just as dependent on market forces as energy resource exporters, but they have a mirror image of this state, since it is associated not with an excess of resources, but with their shortage. Moreover, during periods of economic downturns, net importers of energy resources continue to buy fuel and energy products that are vital for their economies, albeit at reduced prices, while the demand for goods from the oil engineering complex, including high technologies, practically fades away [4 p. 47].

At the same time, the hypertrophied dominance of the fuel and energy complex (especially extractive industries) may become one of the significant factors hindering the transition of the Azerbaijani economy to a trajectory of long-term sustainable development. At present, Azerbaijan's place in the international division of labor is determined, first of all, by the oil and gas industry. It is the products of the oil industry that form the basis of Azerbaijan's exports, accounting for 92.7% of them. At the same time, Azerbaijan is most actively developing trade relations with "far abroad" countries compared to other CIS countries. The share of the CIS countries in Azerbaijan's foreign trade in 2023 was only 6.29%, while other countries of the world accounted for 92.7% of Azerbaijan's foreign trade [5 p. 125].

The growing instability of world markets, as the experience of recent decades shows, is one of the key trends in the development of the world economy in the context of globalization. This is evidenced, in particular, by the lessons of the financial crises of 1987, 1997-1998, as well as the current financial crisis that began in 2008 and has engulfed many countries of the world. Will the oil and gas industry be able to continue to play its fundamental role in moving the Azerbaijani economy onto a sustainable development trajectory in the context of globalization, the development of new information technologies, hedging mechanisms, growing risks and price volatility in the world markets? And can the Republic of Azerbaijan, relying on the export orientation of the oil industry, overcome the lag behind developed countries in the context of globalization, ensure economic security and sustainable development?

The answers to these questions will largely depend on the choice of a scenario for adapting the Azerbaijani economy to global trends in the context of globalization, a strategy for interaction with the outside world that would improve Azerbaijan's position and minimize the adverse external impacts of the current global financial crisis.

It seems that the model for the future development of the Azerbaijani economy should provide for the inevitability of the country's active participation in the process of globalization of the world economy with the maximum use of its competitive advantage - a powerful oil and gas complex. Since it is the size of the resource potential and the degree of its development that will determine for a long time the international significance of the Azerbaijani economy and the degree of Azerbaijan's participation in solving the global energy, economic and political problems of humanity.

Of course, the development of the Azerbaijani economy should not remain aloof from global economic trends related to the accelerated development of high-tech industries and the formation of innovative economic systems. However, it seems that, given the capabilities and characteristics of the Azerbaijani economy, the development of high technologies should begin with the modernization of export-oriented industries, primarily the oil and gas complex. At the same time, it should be aimed at saving energy and raw materials, modernizing production, in order to achieve world standards in productivity, the quality of manufactured products, to ensure the diversification of manufactured products, increasing the share of skilled labor in them.

The prospects for the development of the oil sector of the Republic of Azerbaijan in the near future will be determined by the solution of such key problems as subsoil use and development of the resource base of the industry; the structure of the complex and the modernization of its material and technical component; investments in new projects; development of the oil refining and petrochemical industries. It is precisely on the degree of solution of these problems (and not on the level of world oil prices, which can promote or hinder development), by and large, that the future of the entire oil complex of the republic and the possibility of transferring the Azerbaijani economy to a trajectory of sustainable development will depend.

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