Galib Siraj Huseynov
Head of the Department of Business Organization and Management of Sumgayit State University, doctor of philosophy in economics, docent
E-mail:qalib.huseynov69@mail.ru
UOT: 330; 338; 34; Jel: L34, O38, G18.

Evaluation of the modern state of natural monopolies in Azerbaijan in the example of Azerenergy

Summary

Natural monopolies play an important role in the economy of all countries. They produce products that do not have substitutes that are essential for the functioning of society. The quality of life of the country's population depends on the efficiency of natural monopolies. Natural monopolies, in addition to being large taxpayers, perform a number of socially useful functions, and have a number of positive and negative characteristics. Monopolies in the electric power industry, specially created by the state and provided by legal regulation, exist under the influence of a number of factors. One of the natural monopolies in Azerbaijan is the state-owned vertically integrated Azerenergy OJSC. Here, the issues of reforms and state regulation, as well as the author's proposals and conclusions are included in the article.

Keywords: *natural monopoly, Azerenergy, electric power, electricity, price, service, sector, reform, gas, efficiency, consumer*

Introduction

The topic of natural monopolies is one of the most relevant topics for countries that have taken the path of market economy, because the well-being and life of society directly depends on the behavior of natural monopolies. Natural monopolies provide consumers with essential goods (electricity, water supply, gas, etc.). The quality of life of the population depends on the efficiency of their work. [1, s. 120-124].

Nature and characteristics of natural monopolies

The nature of the concept of natural monopoly has been interpreted differently by different theoretical schools and authors. Since our research is more related to their social nature, let us refer to the definition given by J. Sapir. "Natural monopoly is a special form of monopolies, where the production of goods and services allows to create a single more effective organizational structure of production and a more efficient system of service to the population". [6, s. 42]. The indicated units are of great social importance to provide the population with vitally necessary services and are mostly used by the state for these purposes. Therefore, the activity of such monopolies is under the control of the state compared to others. Today, the largest natural monopolies are in the transportation and energy sectors, as economies of scale increase firm size. This is manifested in the fact that the establishment of several small firms instead of one large firm in such areas will lead to an increase in production costs, and therefore to an increase in prices, which is not beneficial for the state or society as a whole. Some of the natural monopolies in Azerbaijan are related to the extraction and export of natural resources. In this regard, another important feature of Azerbaijan's natural monopolies is their special budget-forming function. Taxes paid by natural monopolies in our country for the production of oil and gas and income from foreign economic activity constitute a significant part of the budget revenues of Azerbaijan. These natural monopolies, in addition to being large taxpayers, perform a number of socially useful functions. The most important of these are social and infrastructural functions. The social function of natural monopolies is that these organizations provide public services to the

population. [3, s.216-218]. The infrastructural function of natural monopolies includes their ownership of the most important infrastructure facilities. For example, by owning Azerenergy power lines, Azersu and Azerigas pipelines, which are among the largest natural monopolies in Azerbaijan, they ensure the country's internal integrity and general economic space.

Despite the fact that natural monopolies play an important role in the country's economy, they also have a number of disadvantages. First of all, their activities cause public dissatisfaction due to the quality and price of the services they provide in a number of cases. In order to recover from losses, they set high barriers to access to the goods they produce: they raise tariffs on manufactured goods, they introduce additional services to consumers. However, these methods do not eliminate the profitability of these enterprises, because the main reason for the losses of these enterprises is the obsolescence of the main production funds and the lack of interest of a number of monopolists in applying innovations. [6, s. 329-340]. Due to their nature, natural monopolies have little desire to update their material and technical bases and apply technologies. The government of Azerbaijan uses state regulation methods to force monopolies to operate more efficiently and to save consumers from arbitrary tariff increases. The Law of the Republic of Azerbaijan on Natural Monopolies, the Law of the Republic of Azerbaijan on Antimonopoly Activities, the Law of the Republic of Azerbaijan on Regulated Prices, the Law of the Republic of Azerbaijan on Electric Energy and laws related to other fields, the relevant executive power in order to prevent the abuse of dominant positions or restrictive actions of economic entities body carries out state control. Natural monopolies also have certain dangerous characteristics, among them, they have the ability to dominate the relevant market relations and establish their own unlimited market power dictatorship. Prevention of such abuses of natural monopolies is still possible through the creation of state ownership and state regulation in these areas. [4, s. 386-388].

The electric energy sector of Azerbaijan as an object of natural monopoly

It should be noted that electricity is at the heart of modern economies and provides an increasing share of energy services. As the world grows richer, its share of energy services continues to grow, and new demand sources such as digitally connected devices, air conditioning, and electric vehicles expand, demand for electricity will continue to grow. Electricity demand growth will be particularly strong in developing economies. However, it is fair to say that despite the great focus on electrification in the Soviet era, as well as the high electrification rate from that era, access to modern energy services is limited, especially outside the big cities and in remote areas where incomes are generally the lowest. Average per capita electricity consumption in the residential sector in the regions is low. Two main barriers to access to energy are reliability of energy supply and affordability. At the same time, poorly maintained infrastructure during the Soviet era is the main obstacle to the reliability of supply. In some cases, subsidized prices can create difficulties for consumers, resulting in increased non-payment for electricity. The electric power sector also plays an important role in the economy of Azerbaijan. Our country's large oil and gas resources and its role as an exporter, as well as the strong development observed in this field in recent years, have led to huge economic growth. Thanks to the investments of international companies, new generation capacities have been commissioned, and public revenues have increased, which have been reinvested in the energy sector, including network expansion, rehabilitation and modernization of systems. These investments have led to the elimination of electricity shortages and improved overall energy supply security. On the other hand, energy subsidies and heavy debts of the public sector have resulted in the inability of the energy sector to

generate adequate financial resources to maintain the aging infrastructure to the required technical standards; most of the improvement programs were implemented as part of long-term loans from international financial institutions with state guarantees. In the first years of the transition to a market economy, failures at the national level in the operations of the centrally controlled system in the newly independent countries began to manifest themselves. Thus, energy systems have become highly deregulated in an attempt to nationalize previously common assets. The energy companies were divided into two segments, the main decision-making bodies for the energy ministries and the commercial operators originally established as vertically integrated national energy companies.

In such a situation, the state of Azerbaijan rightly retained the leverage over the state electricity industry, and natural monopoly subjects in the electricity industry got the exclusive right to carry out the activities intended for them. Thanks to the launched huge energy projects, as well as the replacement of oil with natural gas and the installation of new energy-saving technologies in the production of electricity, a significant reduction in energy consumption was achieved in all areas of the country's economy. It is known that natural gas dominates Azerbaijan's electricity production (90%), and large water production has an indicator of 8%.

Azerenergy as the largest natural monopoly representative

Today, one of the largest natural monopolies in Azerbaijan is the state-owned vertically integrated Azerenergy OJSC, where economies of scale traditionally lead to an increase in the size of the firm, and competition does not exist. Similarly, heat and gas providers are state-owned, vertically integrated companies dating back to the Soviet era. [7]. The state, which owns all-natural monopolies in Azerbaijan, also manages the energy sector and implements reforms aimed at increasing system efficiency, reliability and transparency of supply. The Law of the Republic of Azerbaijan on Electric Power envisages gradual reform of the field until 2025. The government plans for independent generators to enter the sector. It is clear from the world experience that the possible privatization of strategic assets cannot have a negative impact on the sustainability and security of energy. Certain successes have already been achieved in this direction. For example, the modernization of transmission and distribution facilities in the electric power industry has achieved the reduction of outages and network losses to less than 10% of total production. However, in 2015, as the first step for the reform of Azerbaijan's electric power industry, it is accepted that all power distribution assets and functions will be completely separated from the state company Azerenergy and transferred to another state company Azerishiq OJSC (former Baku Electric Network OJSC). It should also be noted that, as the largest electricity supplier, Azerenergy owns, operates and is the transmission system operator for most generation assets, including gas-fired, oil-fired and hydro plants. The Law on Electric Power establishes some provisions for third-party access, so that Azerenergy can buy electricity from other producers, and other entities can buy electricity from Azerenergy (or other state-owned companies) and sell it to end consumers. Alternatively, independent generators or sites may supply electricity to consumers through their own grid or through the state transmission system; such arrangements account for about 1% of electricity generation.

The existence of monopoly areas specially created by the state and ensured by special legal regulation in the electric energy industry can be explained by the following reasons. Parallel organization of single-profile production by a competing company in the market for the provision of electricity transit and distribution services by a natural monopolist is not

appropriate. For example, a trunk transmission line parallel to an existing power line is not feasible and is not necessarily required due to the sufficient capacity of the previously constructed and already operational line. The existence of natural electricity monopolies is determined by the large scale of production. One economic entity can supply the entire market by having lower costs than the costs of a number of economic entities competing with it. Such conditions are typical for a power grid company in particular. Although the level of electrification and access in Azerbaijan is high, the energy infrastructure itself is aging and requires a high level of maintenance, modernization or rehabilitation in the energy supply chain. Because prices are below cost recovery levels, the large capital investments required are particularly difficult to mobilize under current pricing and regulatory structures. Fixed energy infrastructures, including district heating systems, natural gas and electricity transmission and distribution networks, are most at risk: lack of investment leads to greater inefficiencies, and the loss of capacity over time can further jeopardize energy security.

In the Strategic Roadmap for the development of communal services (electricity and heat energy, water and gas) in the Republic of Azerbaijan adopted in 2016, the possibilities of using different methodologies are investigated during the implementation of the improvement of operational efficiency, which is considered the main direction by various countries in the electricity sector. According to this document, the government plans to diversify the country's energy portfolio and create an additional total of 420 MW of renewable energy generation capacity with 350 MW of wind, 50 MW of solar and 20 MW of biomass. The map shows that approximately 94 percent of the electricity produced in Azerbaijan is generated by thermal power plants, and the economical and efficient use of natural gas, which is a primary energy resource, is of great importance. If we take into account that the specific weight of the use of natural gas in the production of electricity is high compared to other energy sources, then we can conclude that our country has the opportunity to produce electricity relatively cheaply compared to neighboring countries. On the other hand, low electricity prices can act as one of the factors preventing the stimulation of responsible consumption and efficiency. Therefore, the Tariff Council, which regulates the price of electricity, heat and natural gas in Azerbaijan, periodically reviews the tariffs in order to improve the efficiency of electricity consumption. In our opinion, the progress towards the determination of market prices in relation to natural monopolies in Azerbaijan is still at an early stage. In general, when implementing the tariff regulation of electricity, it is necessary to apply optimal prices, taking into account not only the costs related to Azerenergy's own income generation, but also the following factors:

- reconciliation of interests of consumers and producers;
- creation of favorable conditions for the dynamic and intensive development of the economy;
- purposeful and efficient use of resources;
- increasing the level of revenues to the state budget:
- phased elimination of subsidies and grants;
- purchasing power of the population, demand-supply level;
- domestic production conditions of goods (work, service);
- world market prices, etc.

Low final consumer prices affecting electricity consumption, introduction of discounts for some industries that are rarely used in the world electric power industry, lack of tariff differentiation based on time of day and volume-based tariffs, etc. opportunities for more efficient use of electricity can be created by taking into account such shortcomings as well as

other similar factors. Under subsidized tariffs, natural monopolies have no incentive for residential and industrial consumers to improve energy efficiency. The energy saved can be exported to generate income or used more efficiently elsewhere for the benefit of the national economy. Azerbaijan needs an energy efficiency strategy to influence energy demand and promote energy savings. Clearly, a stronger focus on energy efficiency in key sectors will improve the performance of the country's economy and ensure a more sustainable use of its resources.

Azerbaijan is a country with a high energy intensity, which conditions the continuous general inefficiency in energy use, and the role of climate and structural economic factors cannot be excluded here. There is significant potential for energy savings in all sectors, especially district heating, electricity generation and networks, industry and buildings. If the state of Azerbaijan used energy efficiently like the countries of the Economic Cooperation and Development Organization, it is likely that the primary energy consumption in the country as a whole would be reduced by half. How quickly a country's energy efficiency potential can be tapped is largely influenced by factors such as government policies, particularly energy pricing, market reforms, and improved financing for energy projects. It should be noted that in July 2021, the law of the Republic of Azerbaijan on the efficient use of energy resources and energy efficiency was adopted. This law, which promotes energy saving in all sectors, defines the legal, organizational and economic bases of state policy in the field of efficient use of energy resources and energy efficiency, and regulates the activities of state bodies (institutions), individuals and legal entities in this field and the relations between them. Along with this, the government is also working on the National Energy Efficiency Action Plan (NEEAP). The experience of many countries shows that minimum energy efficiency standards are one of the most effective and economical instruments of energy efficiency policy. In general, a hybrid arrangement is observed in the management of a number of natural monopoly areas in Azerbaijan, a clear division of powers is not enough. The government of Azerbaijan should pay more attention to improving energy efficiency to take advantage of the huge untapped potential for improved energy security and economic growth with increasing energy consumption. Here, it is recognized that energy efficiency strategies are well integrated into the broader policy framework of economic development. Energy efficiency strategies and related action plans should provide a stable source of funding, yet energy pricing remains a barrier to investment.

Although the laws of the Republic of Azerbaijan on Natural Monopolies and Electric Power were adopted in 1998, taking into account the international experience, the improvement of the normative acts on them and the development of the legislation on natural monopolies in general have not stopped until now. These indicate the existence of a special regulation system of natural monopolies that is in the process of development and needs clear structuring. It should also be noted that the regulation of prices and tariffs in the types of activities that the state has decided to maintain regulation is one of the main approaches of the state in this direction. In addition, important forms of the state's influence on markets are the protection and promotion of competition, determining the rules of market activity, regulating the amount of goods circulating in the market, determining taxes and subsidies. In the Strategic Roadmap for the development of communal services (electricity and thermal energy, water and gas) in the Republic of Azerbaijan, a gradual transition to a liberal market model based on enhanced competition is required, separately, the creation of a wholesale market and the expansion of the share of renewable resources.

Specially referring to the electric energy market, it should be noted that electric energy, electric power, electric energy transmission and distribution services is a complex of operations on the purchase and sale of products and services, such as technological services related to ensuring the reliable operation of the main electric grid and maintaining the quality parameters of energy supply, energy marketing services, and energy efficiency services provided to consumers at a normative level. [2, s. 27-30]. State regulation of electricity tariffs allows the government of any country to influence economic and social processes. In the electricity industry, the tariff policy is used by the state as a means of ensuring the socio-economic development of the country, as an effective mechanism for the development of various industries and regional economies. An important task of each state is to find the state impact measures that should be applied for the efficient operation of the electricity market. The state determines the rules of market development and activity, the procedure for concluding and executing contracts, and protects the rights of consumers and society as a whole. [8]. The level of energy prices is very important to attract investment and encourage citizens to use energy efficiently. It is also significant that the prices of oil, gas and electricity for end users in Azerbaijan are among the lowest in the region. Current energy prices are below the full cost of supply. In 2018, energy price subsidies in Azerbaijan tripled compared to 2010 and amounted to 2.6 billion US dollars or 5.8 percent of GDP. The law of the Republic of Azerbaijan on electric energy envisages gradual market reform until 2025. The government plans to allow independent generators to enter the sector and buy existing power plants or build new ones. The possible privatization of strategic assets cannot have a negative impact on energy sustainability and security.

The result

Moving towards competitive markets requires urgent and serious structural changes and reforms to accelerate structural energy policy reforms, especially electricity-related reforms, and strong restructuring and revitalization of electricity. In this regard, we consider it appropriate to keep the following issues (suggestions) in mind: a comprehensive sustainable energy strategy based on existing programs should be developed; Azerbaijan should attract more private sector investments for modernization of equipment, introduction of energy-saving technologies and establishment of market-oriented management systems. The main obstacles to attracting investments for the improvement and maintenance of existing systems in the CIS countries, which have a similar fate, are tariff structures where energy tariffs remain below the payback level and energy subsidies that do not allow investors to return their investments; transparent and non-discriminatory access to the network must be ensured; considering that the network infrastructure is old and the bottlenecks in the national transmission system cause deficiencies and reduce the reliability of the system, the modernization of electric networks and the expansion of regional interconnections should be implemented; an independent regulatory body should be established for the protection of business and consumer interests, regulation of the quality of services, transparency and consumer protection in determining tariffs and monitoring the development of prices should be strengthened; in the direction of the implementation of the government policy related to national research and development in Azerbaijan in relation to electric power engineering, a separate scientific and research center or a technical university should be established and provided with appropriate financial resources; transparent implementation of energy legislative frameworks must be ensured; improvement of energy infrastructure and diversification of supplies in interaction with the markets of the countries of the region;

subsidies should be phased out over a defined medium-term period with the aim of achieving full cost-reflective tariffs that allow for planned capital investment.

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Qalib Sirac oğlu Hüseynov
Sumqayıt Dövlət Universitetinin Biznesin təşkili və menecment kafedrasının müdiri, iqtisad elmləri namizədi, dosent
E-mail:qalib.huseynov69@mail.ru

Azərenerji nümunəsində Azərbaycanda təbii inhisarların müasir durumunun qiymətləndirilməsi

Xülasə

Təbii inhisarlar bütün ölkələrin iqtisadiyyatında mühüm rol oynayır. Onlar cəmiyyətin fəaliyyəti üçün vacib olan substitləri olmayan məhsul istehsal edirlər. Ölkə əhalisinin həyat keyfiyyəti təbii inhisarların işinin səmərəliliyindən asılıdır. Təbii inhisarlar iri vergi ödəyiciləri olmaqla yanaşı, bir sıra ictimai faydalı funksiyaları yerinə yetirirlər, həm də bir sıra müsbət və mənfi xüsuiyyətlərə malikdirlər. Elektroenergetika sənayesində dövlət tərəfindən xüsusi yaradılmış və hüquqi tənzimləmə ilə təmin edilmiş inhisar sahələri bir sıra amillərin təsiri altında mövcuddur. Azərbaycanda təbii inhisarlardan biri dövlətə məxsus şaquli inteqrasiya olunmuş Azərenerji ASC-dir. Burada həyata keçirilən islahatlar və dövlət tənzimlənməsi məsələləri, eləcə də müəllifin təklifləri və gəldiyi nəticələr məqalədə yer alır.

Açar sözlər: *təbii inhisar, Azərenerji, elektroenergetika, elektrik enerjisi, qiymət, xidmət, sektor, islahat, qaz, səmərəlilik, istehlakçı*

Галиб Сирадж оглу Гусейнов
Заведующая кафедрой организации и управления бизнесом Сумгаитского государственного университета, кандидат экономических наук, доцент
E-mail:qalib.huseynov69@mail.ru

Оценка современного состояния естественных монополий в Азербайджане на примере Азерэнержи

Резюме

Естественные монополии играют важную роль в экономике всех стран. Они производят продукты, не имеющие заменителей, которые необходимы для функционирования общества. Качество жизни населения страны зависит от эффективности естественных монополий. Естественные монополии, помимо того, что являются крупными налогоплательщиками, выполняют ряд общественно полезных функций, а также имеют ряд положительных и отрицательных характеристик. Отрасли монополии в электроэнергетике, специально созданные государством и предусмотренные правовым регулированием, существуют под влиянием ряда факторов. Одной из естественных монополий Азербайджана является государственное вертикально интегрированное ОАО «Азерэнержи». В статью включены вопросы реформ и государственного регулирования, а также авторские предложения и выводы.

Ключевые слова: *естественная монополия, Азерэнержи, электроэнергия, электроэнергетика, цена, услуга, сектор, реформа, газ, эффективность, потребитель.*

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