



Islas Implemented in Uzbekistan for the Regulation and Management of the Electric Power Sector

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ABSTRACT

This scientific article explores the reforms carried out in the electricity sector in the context of globalization and their results, the problems that persist in the network, natural monopoly situations in the process of electricity generation and transmission, problems in the regulation and management of the electric energy sector, and offers and recommendations on ways to eliminate them.

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New information and communication technologies and inclusive participation in global commerce are two examples of these dimensions. It is advised that employers emphasize on employee motivation, new information and technology, as well as global membership overlap in multilateral trade and investment.

Introduction. One of the main sectors in the development of the country's economy is the electricity sector. The promising development of the state is always evaluated according to its energy resources and the potential for the production of electrical energy. Focusing on the economy of developed countries, including the United States, European countries, China, Japan, South Korea, Singapore and Malaysia, we can see that they have an electric energy production area based on modern innovation technologies.

In the sustainable development of the country's economy, there is always a need for uninterrupted (regular) and quality electricity supply. In particular, the simultaneous supply of electricity to the production, service and infrastructure sectors is a complex technological process. Because the demand and supply of electricity occurs at the same time. There is always an increasing demand for electricity from all sectors and sectors, but the simultaneous supply of electricity to all sectors and sectors on a regular basis creates a number of complications. The growing demand for electricity in countries around the world is causing global problems in the economies of countries. Because on Earth, the energy resources used to generate electricity are unevenly distributed.

It is considered to have long years of experience in the production of electrical energy in our country, transmission through main lines and delivery through regional power networks. Therefore, in recent years, comprehensive reforms have been carried out on the provision of regular energy to all sectors of the country's economy.

In this regard, for the first time, the president of the Republic of Uzbekistan, in his address to the Parliament of our country - the Supreme Assembly, said that "in order to improve the efficiency of the use of energy resources, we must reform the energy system of our country, develop a clear strategy in this regard. First of all, it is necessary to privatize enterprises that operate inefficiently and at a loss, to end the monopoly. It is also necessary to form a competitive environment in the supply of electricity and encourage the use of alternative energy sources. This requires a transition to market mechanisms for financing production, with a wide involvement of the private sector" [1], he noted.

In the economy of any country, the demand for electricity always increases. The higher the demand for electricity, the higher its cost. Most of the energy resources used in the production of electricity are non-renewable resources. This affects the cost of products and services. The growing demand in the economy is always met through high-limit prices. Economic efficiency is achieved by constantly shaping the competitive environment in the power industry, developing measures aimed at reducing prices, establishing energy production using modern technologies, using energy-efficient technologies in industries, modernizing energy production stations, reducing production costs using modern technologies and renewable energy sources.

Analysis of thematic literature. As reforms carried out in the development of the country's economy: ensuring the independent development of the sphere and sectors; separation into the main and service branches by implementing structural reforms in the activities of the sphere and sectors as part of natural monopolies, development of entrepreneurial activity in the service branches of the sphere; by adopting separate programs for the development of Regions and territories; the development of entrepreneurial

activity is carried out due to the formation of a healthy competitive environment in the areas of electricity production, transmission through main lines and supply through regional power networks, and the involvement of foreign investments in the industry.

N. on the reforms carried out in the electric energy sectors of our republic. Yusupova [2], L.A. Sokolova [3], A.G. Scientists such as Nuriddinova [4] conducted scientific research. Most of their scientific research work is aimed at eliminating problems and shortcomings in the field of electricity.

Economic support for the energy sector has always been carried out by the state, and it has always been within the spheres of natural monopolies. For this reason, the electricity price (tariff) generated at all times has been set by the state.

The group of countries for the production of electricity in the world is located as follows: South America, Western Europe, Asia, CIS countries, Latin America, Africa, Australia. In developed economies, 80% of the total electricity is produced, while developing countries account for 20%. [5]

The electric energy sector forms the main sector of the economy, providing the national economy with the universal and immutable resources necessary for any production process. The objective barrier to the development of competition in the field of transmission and distribution of electricity, as in any infrastructure sector, is considered to be the technological features of production. [6]

Companies operating in the field of electricity-ka of developed countries are constantly improving their traditional other-ruv mechanisms, in order to have their own consumers in the electricity market. In particular, long-term strategies for the development of the industry are being developed, incentive mechanisms for the implementation of prepayment for electricity are being introduced, capital investments in the field are being developed, programs based on ideas based on research and innovation in customer service are being developed. [7]

Existing problems in the energy sector can accumulate, questioning the development of the industry and sectors and their financial situation. To prevent this, it will be necessary to focus on the development of the electricity sector in a decent way (expanding the use of renewable sources, effective use of low-cost technologies, prepayment of fees for used electricity, the formation of a competitive environment by increasing the involvement of foreign capital amounts in the industry). [8]

The electricity market of any country has historically been under state control, and the regulation and management of network activities has been governed not by market mechanisms but by public administration mechanisms. Over-centralization of the process of electricity generation and supply to consumers will keep the network in a monopoly position. As a result, it hinders the use of more flexible and diverse forms of electricity generation and sales management, as well as various forms of barriers to market liberalization and the effective formation of a competitive environment. [9]

In the world's experience, the need for widespread use of alternative and renewable energy sources is determined by the rapid growth of the demand for electricity, which will increase by 1.5 times by 2030 compared to 2010, that is, by 2050, it will increase by 3 times. [10]

The main problem facing the oil and gas industry today is the importance of using low-cost methods in the production and delivery of finished products to consumers. For this, effective management of the supply chain in the field is to increase the efficiency and competitiveness of oil and gas enterprises and its supply in general. [11]

While ensuring energy security is not easy, it is important to take steps to achieve it. Energy

security is a multifaceted concept that has dimensions of particular importance: technical and physical obsolescence resulting from infrastructure breakdowns, natural disasters, social unrest, political actions, or acts of terrorism; long-term physical availability of energy supply to meet future growing demand; harmful effects on economic activity and the population due to energy shortages, prices or price changes; serious consequences affecting human health, damage from terrorist acts that damage various forms of property. [12]

As the population of the earth is increasing, their needs are also increasing accordingly. Science and technology are being developed by world scientists in order to effectively meet human needs. As a result of the development of science and technology, the economy of the countries of the world is developing. For the effective development of the country's economy, regular and high-quality electricity supply is necessary. No country's economy can develop without electricity. Electricity generation and supply to consumers are separated by their own characteristics. At the same time, the production of electricity requires a large amount of non-renewable energy sources (natural gas, coal, oil products, etc.). This causes the cost of electricity production to increase. Renewable energy sources, namely the "green four" energy (solar, wind, hydro, and nuclear energy) are needed for low-cost electricity generation. [13]

The adoption of several decrees and resolutions by the president of our republic on the development of the electric power sector is leading to many positive changes in the industry.

The main technical means used in the processes of production of electrical energy, transmission through main lines and supply of territorial electrical networks are highly outdated. Replacing these technical tools with modern energy-saving tools and technologies requires a large amount of capital and foreign investment.

In order for the country to develop economically, it needs to develop industrial enterprises, that is, Enterprises and organizations operating in its Real sectors. When enterprises and organizations in the industrial sector develop, the country rises economically. To do this, the development of the country's electricity sector is necessary. Because, of course, the power sector plays an important role in the development of all industries and industries.

Research methodology. The article makes extensive use of methods of scientific study, comparative comparison, study and economic comparison and analysis of existing problems in the management of the electric power sector in our country, logical thinking, scientific abstraction, analysis and synthesis, induction and deduction.

Analysis and results. Ways are being developed to overcome the existing problems and shortcomings of the electric power sector by conducting research based on the experience of foreign advanced countries, studied by leading expert and Economist scientists of the industry. In particular, the cases of environmental and economic damage caused by environmental and climatic changes in the production of electrical energy, uneven distribution of energy resources and fossil resources by countries of the world are scientifically studied by economists and express their opinion on their elimination.

Due to the growth of the population in the country, the improvement of the lifestyle of the population, as a result of the increase in enterprises and organizations in the sectors of the economy, the demand for electricity also increases in parallel. But as the demand for electricity increases, so does the problems in the field of electricity production. Because the production of an additional amount of electricity also increases the demand for energy resources, from year to year there is a shortage of energy resources. This causes an increase in electricity prices (tariffs).

The following should be cited as existing problems in the field of electric power industry of our republic:

- the production of electricity, transmission through main lines and delivery through regional electricity networks is the main branch of the economy;
- insufficient scientific justification of theoretical knowledge on the control, regulation and management of enterprises and organizations engaged in the production of electricity, transmission through main lines and delivery through territorial power networks;
- the presence of natural monopolistic States in the field of electricity (production of electricity, transmission through main lines and delivery through territorial networks);
- the absence of a competitive environment in the field; personnel operating in the field of electricity production, transmission through main lines and supply through regional electricity networks are mainly secondary educated personnel, and the lack of experience skills in them;
- lack of modern technologies in the field of electricity production, transmission through main lines and supply through regional power networks;
- the fact that in the real sector of the economy, the electricity sector is high.

In our republic, consumer demand for electricity is increasing from year to year. To meet the increasing demand, increasing the power generation capacity every year can reduce the amount of "natural loss" available in the industry (by changing the technologies used in the production of electricity to new modern technologies, updating the power transmission cables and transformers used in the main lines and regional networks). In the field, it will be necessary to increase energy production using renewable energy sources and, through this, develop a competitive environment. The production of electrical energy in our republic is carried out by 6 thermal power plants and 3 thermal power centers, which are part of JSC "thermal power plants". Energy resource providers are natural gas producing and supplying enterprises, Uzbekkomir JSC and other enterprises. The transmission of electricity through the main lines is engaged in the development of "Uzbekistan national power networks" JSC. The supply of electricity to the population and sectors of the economy is engaged in enterprises that are part of the JSC "Regional Electricity Networks".

Electricity produced in our country is obtained mainly using natural gas, oil and gas condensate, coal and water. The bulk of this is natural gas, which leads to an increased cost of electricity generated. We can also see this through the data presented in Table 2.1. As a unit of measurement of primary fuel and energy resources per capita, t.n.e. shown in equivalence.

Table 1. Primary fuel per capita-enegetics resources (t.n.e.)

Fuel-enegetics resources	years									Difference from 2020 to 2000
	2000	2005	2010	2015	2016	2017	2018	2019	2020	
Of the republic of uzbekistan on	2,2	2,2	2,1	1,6	1,6	1,6	1,7	1,6	1,3	-0,9
of which:										
Oil and gas condensate	0,3	0,2	0,1	0,1	0,1	0,1	0,1	0,1	0,1	-0,2
Natural gas	1,9	1,9	1,9	1,4	1,4	1,4	1,5	1,5	1,2	-0,7
Coal	0,03	0,03	0,03	0,03	0,03	0,03	0,04	0,03	0,03	0
Hydro-energy	0,01	0,03	0,02	0,02	0,02	0,02	0,02	0,02	0,01	0

According to the data in Table 1, oil and gas condensate resources are 0.3 t in 2000.n.e. founded, in 2020 0.2 t.n.e. decreasing to 0,1 t.n.e.ni founded. Natural gas resources 1.9 in 2000 t.n.e.ni founded 0.7 in 2020 t.n.e.ga decreasing 1,2 t.n.e.ni founded. Coal resources 0.03 in 2000 t.n.e.ni having established, in 2020 made the same indicator. Hydro-energy resources are 0.01 t in 2000.n.e. having established, the same indicator was observed in 2020.

In addition to the above proposals, it is necessary to plan the construction of industrial enterprises serving the sectors of the economy in order to solve problems in the electrical energy sector and increase efficiency in the field, in areas closer to the area where thermal power plants and thermal power centers are located.

In our country, the electric energy network is today divided into three independent shareholder societies. These are: production of electrical energy; transmission of electrical energy through main lines; delivery through regional electrical networks. Within these, the transmission of electrical energy through trunk lines always retains the nature of a natural monopoly. There is an opportunity to form a healthy competitive environment in the areas of electricity production and supply through regional electricity networks.

Conclusion. The power sector of the Republic of Uzbekistan is operating in a very difficult position, the reason is that from year to year the country is taking great steps towards economic development. The lifestyle of the population is also improving, which requires additional electricity. Below are the common problems of organizations engaged in the production of electricity in the Republic, transmission through main lines and transmission through regional electricity networks:

- since the years when our country gained independence, until now, the electricity sector has been fulfilling its donation (support) for the rest of the industry and sectors;
- personnel potential in the areas of production of electrical energy, transmission through main lines and supply through regional electrical networks is in an unsatisfactory state. The system of training, training of personnel in all branches of the electric power sector (personnel in the middle tier – local training institutions, personnel in the upper tier – in foreign countries) is not properly established;
- the establishment of three independent shareholder societies in the electric power sector is causing an increase in management costs in the sector;
- the setting of prices (tariffs)for electricity in our republic, so far, is determined by the working group of the Republic (the Working Group commission established under the Cabinet of Ministers). Setting prices (tariffs) on electricity should be carried out on the basis of market principles (on the basis of stratification by sectors of the economy);
- the management system of the activities of organizations engaged in the production of electrical energy, transmission through main lines and transmission through regional power networks still retains the old principles.

To eliminate the above-mentioned problems on the electric power sector of our republic, it is necessary to carry out the following:

- accelerate the work of replacing the main tools used in the network for the production of electrical energy with modern technologies in stages;

- it is necessary to improve control activities in thermal power plants and thermal power centers. Adaptation of management activities to the principles of low cost and the introduction of modern management mechanisms;
- listing outdated equipment in thermal power plants and thermal power centers and providing new types of modern tools;
- It is necessary to reduce the impact on environmental ecology by IES and IEM. To do this, the adoption of modern programs to reduce the level of impact on environmental ecology and the use of modern advanced technologies;
- accelerate the work of the state private partnership in the production of electricity, the formation of a healthy competitive environment in the field by attracting foreign investors;
- increase the amount of use of new energy-saving tools to reduce the amount of "natural loss" in the transmission of electrical energy through main lines and in the supply of regional electricity networks;
- development of an entrepreneurial environment by nationalizing nationalized enterprises and organizations engaged in the transmission of electrical energy through territorial power networks.

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