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# **Issues of the Development of the Fuel and Energy Complex of the Republic of Uzbekistan**

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**ABSTRACT:** The oil and gas industry lacks a perfect production structure. This is reflected in the fact that the production of deep processing products and high-tech products is insignificant, at the same time a significant share of oil and gas processing falls on the products of primary and medium processing (liquefied gas, gasoline, kerosene, diesel fuel, tires, rubber, etc.).

The article, based on economic analysis, highlights the main problems and substantiated the priorities for the development of Uzbekistan's fuel and energy complex

**KEY WORDS:** Fuel and Energy Complex (CHP), oil and gas industry, electricity, energy resources, production structure, production efficiency.

## **I. INTRODUCTION**

The structure of production in the oil and gas industry is not perfect enough. This is reflected in the fact that the production of deep processing products and high-tech products is insignificant, at the same time a significant share of oil and gas processing falls on the products of primary and medium processing (liquefied gas, gasoline, kerosene, diesel fuel, tires, rubber, etc.).

It should be noted that in recent years the sustainable development of the country's fuel and energy complex has received special attention. In order to improve the efficiency and sustainable development of the oil and gas industry, the following measures were taken to improve the management of the latter, to reduce the intermediate links in the management system, to convert six oil and gas and refining facilities into subsidiaries of Uzbekneftegaz, the regional division of Uztransgaz, with the aim of establishing direct management of production facilities, and the creation of Khududgaztaminot on the basis of gas-supplying subsidiaries.

In order to switch to modern methods of production, transportation, distribution and sale of electricity, three companies have been established on the basis of Uzbekenergo: Thermal Power Plants, National Electric Networks of Uzbekistan and Regional Electric Networks.

The adoption in May 2019 of the Renewable Energy Act, as well as the Public-Private Partnership Act, is an important step in the development of the country's electricity industry, which is the legal basis for accelerating the implementation of renewable energy projects.

## **II. RESEARCH METHODOLOGY**

This article is analytical and research. The study is based on an analysis of key indicators of socio-economic development of the Republic of Uzbekistan. They are collected from various national and international scientific articles, the official website of the Ministry of Energy of the Republic of Uzbekistan on statistics, ministries of foreign economic relations, investments and trade of the Republic of Uzbekistan, data from the government portal of the Republic of Uzbekistan, etc. The amount of funds financed in the development projects of the energy complex of the Republic of Uzbekistan, sources of financing and types of investments is analysed. The work uses the methods of statistical and economic analysis, the method of expert evaluation and the method of calculating economic efficiency.

**III.DISCUSSION**

As in all countries of the world, the fuel and energy complex is strategically important in the economy of the Republic of Uzbekistan and plays a key role in its development: this sector of the economy is directed to almost 50% of investment, it gives 22.7% of the total gross domestic product (GDP), has a huge multiplier effect on the development of all sectors of the country's economy, determines the basic parameters of its socio-economic development. At the same time, thanks to the CHP, Uzbekistan provides energy independence and economic security.

The dynamic development of the country's national economy requires adequate energy supply. Maintaining high rates of economic growth is not possible without considerable efforts to maintain the sustainable development of the power plant, which supplies the country's economy with energy resources.

Consequently, the high importance of the fuel and energy complex for the economy of Uzbekistan, on the one hand, determines the relevance of this topic, and, on the other hand, requires studying the current state, identifying problems and justifying the prospects for its development.

It should be noted that Uzbekistan's power plant unites industries related to: the extraction and production of primary energy resources, their processing into other fuels, the conversion of primary resources into other types of energy (electric, thermal energy, etc.), their transportation and distribution to consumers.

The structure of the power plant includes: fuel industry (coal, gas, oil,) and electricity.

In Uzbekistan, the resolution of issues to accelerate the transition to a competitive market economy, as well as radical modernization, will be associated with improving the efficiency of energy use.

Currently, Uzbekistan's energy intensity is twice the global average. Uzbekistan's economy is very energy intensive by international standards [2]. Uzbekistan is second only to the western European average of 4-5 times, the United States 3.5 times, Japan and Korea more than 4 times and has the highest value in the CIS group. Thus, the energy intensity of Uzbekistan's GDP exceeds the current value of this indicator in Russia - by 80%, Kazakhstan - by 70%, Ukraine - by 20%. [1]

In 2019, the total electricity production in the country amounted to 62.9 billion k·Wh. The average annual capacity of power plants is 70-72%, and per person the amount of electricity production is 1,838 kWh·h, which is the second lowest in the CIS countries after Kyrgyzstan (1,375). For comparison, this figure in the Russian Federation is 7,245, Kazakhstan - 5,405, Tajikistan - more than 2,000 kWh. [2].

It should be stressed that at present the needs of the population and the economy in energy resources are provided in a non-sufficient measure. Thus, while in 2010 the consumption of primary fuel and energy resources per capita in Uzbekistan was 2.1 tons, in 2019 - 1.6 i.e., i.e. decreased by 23.9%. This was due to a decrease in the consumption of natural gas, and for the rest, i.e. oil and gas condensate, coal and hydroelectric power, this indicator has not changed.

The analysis of the production and production of fuel and energy products for 2010-2019. Uzbekistan showed that natural gas production decreased by 8% and oil production by 62.5%. At the same time, coal production increased by 11.5%, gas condensate and heat production increased by 14.4% and 15.3%. At the same time, installed electricity capacity increased by 20.6%. The embellishing occurred due to the collapse of the resource base, which resulted in a shortage in the coverage of needs.

In principle, the high energy intensity of Uzbekistan's GDP indicates the existence of a high level of production and production costs in the fuel and energy sector and, as a result, insufficient level of financial efficiency of the oil and gas sector fuel and energy complex enterprises.

In the industrial sense, the main causes of this phenomenon are the deterioration of fixed capital and outdated infrastructure of the energy sector. Thus, the share of obsolete fixed assets (used for more than 30 years) in the Uzbekenergo system is 62.4%. In the process of distributing electricity to consumers, the average annual loss of electricity is 16% of the total volume. In the oil and gas industry, 26.4% of facilities, 59.6% of pre-ordered devices, 55.6% of machinery and equipment are obsolete [2]. At the same time, the average level of capacity of refineries in the country was 34.2% [4].

Today, Uzbekistan's gas transport system includes more than 13,000 km of main gas pipelines, more than half of which are longer than 30 years old. At the same time, the wear factor of 145 units of gas-processing units of the country is more than 100%. For this reason, the country plans to carry out measures to modernize the gas transport system [5].

The Ministry of Energy of Uzbekistan, together with the relevant ministries and agencies with the technical support of international financial institutions (World Bank, Asian Development Bank) has developed the concept of fuel and energy support for the country for 2020-2030.

Together with the international consultant MottMacDonald (UK) the General Plan for the long-term development of electricity in Uzbekistan, including renewable energy sources, has been developed.



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The main ultimate goal of Uzbekistan's long-term investment policy, taking into account internal and external factors, is to form an innovation-oriented economic structure based on large-scale modernization and industrialization of the country to ensure sustainable high rates of economic growth and well-being of the population, are among the developed competitive countries of the world. It should be noted that the country's investment potential development strategy needs to be consistent<sup>1</sup>.

In the energy sector, the construction of six new power plants on the basis of public-private partnerships with foreign investors has begun. Their total cost is \$2 billion and the total capacity is 2,700 megawatts.

In the context of the COVID-19 pandemic, enterprises and their workforces were forced to comply with quarantine requirements, which led to difficulties in the implementation of investment projects, including the inability to bring foreign specialists to the country due to the suspension of international transport communications. As a result of the pandemic, natural gas exports declined significantly as demand declined. In particular, the export of natural gas produced to China decreased threefold, and Russia completely stopped.

In response to the prevailing conditions, Uzbekistan has also taken appropriate state support for the fuel and energy sector. In particular, in order to supply the country's population with gas and electricity, 401 billion sums of subsidies have been allocated, 500 billion sums of electricity and 250 billion soums[7].

## IV. RECOMMENDATIONS

As part of the structural transformation in the economy, it is necessary to accelerate the transformation of state-owned companies. At present, most enterprises with the participation of the State remain a heavy burden for it because of their financial instability. Therefore, this year the implementation of the reform program of all state-owned enterprises has been started. In particular, in 2021, UzbekNefteGaz and UzbekHydroEnergo will be able to enter the international financial market and raise funds without government guarantees [6]. This is evidence that Uzbekistan is working to develop and implement a unified government policy in the country's fuel and energy sector aimed at ensuring energy security, sustainable supply of fuel and energy resources to the economy and population, and the widespread promotion and development of renewable energy sources.

The current structure of energy resource utilization creates a high demand for energy and requires rapid development of the fuel industry. According to forecasts, electricity consumption in the economy will increase by 1.8 times by 2030, natural gas - by 1.7 times, and consumption of GSM - 2.1 times [2].

In the long term, energy remains the basis of the modern industrial economy, and its use - a prerequisite for the development of the industry. This is because energy is an important ingredient for almost all human activity. Modern energy services are a powerful engine of economic and social development. This explains the increasing energy consumption in the global economy as a whole and the economy of Uzbekistan in particular, where the main factors of demand are the level of economic activity, population growth and technology development.

It should be noted that Uzbekistan, through its own energy resources, can fully cover the needs of the national economy. Thus, at present, energy reserves exceed 3 billion tons of coal, 1.8 trillion cubic meters of natural gas and 71 million barrels of oil [7]

The main strategic challenge facing the fuel and energy complex is to choose the directions of innovative development that ensure its sustainable development, efficiency and reduce the energy intensity of GDP. At the same time, it is important to carry out the tasks of Uzbekistan's energy strategy, based on the use of alternative energy and the introduction of digital technologies.

The great development of energy and energy industries requires an improvement in the strategic management system, which requires the creation of an effective system of strategic planning and development of the power plant, the increase and diversification of energy production, integrated projections of production, supply and consumption of all types of energy resources, as well as targeted programs for integrated energy development. At the same time, the introduction of modern methods of corporate governance, advanced information and communication technologies and automated systems of management, accounting and control in the energy sector is necessary, which will lead to better management efficiency in the energy sector and lower production costs, ensuring transparency of financial and economic actions. At the same time, further improvement of the top marketing system is needed. In this regard, it is necessary to improve the marketing system based on the study of foreign experience of advanced foreign countries and

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<sup>1</sup> Khashimova Naima Abitovna, "Priority areas for the development of investment Potential of Uzbekistan" Vol. 24, Issue 08, 2020, pp. 5829- 5836



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the experience gained in this direction, to develop and take measures to promote the products of the industry in both domestic and foreign markets.

In order to ensure efficient, and on this basis dynamic, the development of the power plant needs to accelerate the process of modernization and technical re-engineering of enterprises and their infrastructure. In principle, the need to accelerate modernization is due to the level and state of development of the power plant industries, globalization and integration into the world economic development system. At the same time, modernization requires less investment than expansion, new construction, because modernization implies a change in already functioning production. By upgrading equipment and introducing innovative technologies, production capacity is improved. In addition to saving material and manpower, modernization saves time, ensuring compliance with modern requirements. Public policies on taxes, financing, competition and intellectual property can have a significant impact on the interaction and flow of knowledge in financing innovative projects. Government can support innovation through financial incentives, tax incentives or a combination of both<sup>2</sup>.

It must be stressed that accelerating modernization requires investment. For this purpose, it is necessary, on the one hand, to create conditions for attracting investment, coordination of investment projects, active involvement of private capital in the extraction and production of energy resources, cooperation with international financial institutions, donor countries, companies, banks and other structures, on the other - the development of market mechanisms for the implementation of tariff policy to increase the investment attractiveness of the fuel and energy complex by improving the tariff policy, which stimulates the formation of a favourable tariff policy. At the same time, it is necessary to improve the mechanisms of public-private partnership, to develop public-private partnerships by creating favourable conditions for this to ensure transparency and on this basis to attract partners.

For the further development of the power plant, it needs to be guided into the rails of innovative development. This is due to the need to pay special attention to modern scientific research, which is the basis for achieving the efficiency of the power plant, increasing its share in the energy market, attracting investment and meeting the energy needs of the population.

## V. CONCLUSION

The main priorities of the innovation and scientific and technical activities of the oil and gas industry are: the constant development and implementation of new equipment and technology at every stage of the production chain "exploration-development-processing" of hydrocarbons, production of industrial products and their implementation; Search for innovative technology and manufacturing technology and use the world's experience in production organization; improving the skills of the company's specialists by disseminating best practices and knowledge. At the same time, in order to accomplish these tasks, it is necessary to create mechanisms to stimulate the introduction of innovative technologies into production processes.

The introduction of PPP mechanisms in the field of renewable energy will ensure the attraction of leading foreign companies with advanced innovative technical and technological solutions to the market for generating foreign direct investment as independent producers of electricity (IPE).

It should be noted that the implementation of investment projects in the field of renewable energy under the terms of PPPs has many advantages, since the entire process of project implementation (raising funds, conducting a feasibility study, choosing technologies, the process of logistics, construction and installation, operation of an energy facility during its life cycle and ownership process) refers to the responsibility of the investor, and the task of a single purchaser of electric energy, i.e. JSC "National Electric Networks of Uzbekistan" to carry out guaranteed purchase of generated electricity<sup>3</sup>.

Improving training, training and retraining of engineering and management personnel in the energy sector is also important.

Thus, the development of the power plant in the above direction, will ensure the sustainable development of enterprises, increase the efficiency of methods and mechanisms for managing their production and business activities and the intensity of systemic transformations in the power plant, expand the use of innovative developments. As a result, the market value and investment attractiveness of enterprises will increase, and, most importantly, the competitiveness of their products.

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<sup>2</sup>Abdurashidova Marina Sagatovna «Features of financing innovative projects in Uzbekistan», Economics and Finance Magazine, Issue 1(133), Tashkent, 2020 pp. 152-158

<sup>3</sup>Abdurashidova Marina Sagatovna «Attracting investment in the electricity sector of Uzbekistan is the key to development» IJARSET [Electronic resource], Vol.7, Issue 3, March 2020, pp. 13199-13205.



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## REFERENCES

1. Allaeva G.Y. «Analysis of the relationship between the sustainable development of fuel and energy industries and the growth of gross domestic product», Economy and innovative technologies. Issue1, № 00033 Tashkent, 2018.
2. <https://regulation.gov.uz/ru/document>
3. <https://ru.wikipedia.org/wiki>
4. Kadirov A.M. «Improving mechanisms to ensure the economic sustainability of industrial enterprises», author's dissertation on PhD, Tashkent 2019, pp31.
5. <http://lex.uz/docs/4410281>
6. Message of President S. Mirziyoyev Oliy Mazhlis of the Republic of Uzbekistan from 30.12.2020 <https://review.uz/post/poslanie-prezidenta-uzbekistana-shavkata-mirziyoyeva-oliy-majlisu>
7. <https://review.uz/post/energetika-uzbekistana-v-usloviyax-pandemii>