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# INNOVATIVE AND EFFECTIVE DEVELOPMENT OF OIL AND GAS INDUSTRY ENTERPRISES

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**Abstract**
This article outlines the organizational structure of oil and gas companies, one of the leading industries of the Republic of Uzbekistan and considered a driver industry for the development of our economy, the analysis of enterprises within this network, internal and external factors affecting effective development, and guidelines, phases, and directions for improving their activities in the near future.

**Keywords:** Effective development, conditions of effective management, effective management principles, the influence of innovation, financial situation, financing of projects, source of financing, oil and gas enterprises, effective management styles, general management structure.

## Introduction

Today, according to the development trends of industrial production in the world, including the development of oil and gas industry on the basis of efficient use of resources, competitiveness on the basis of innovative and digital technologies, optimal organization of production, increase of labor productivity, organization of decent workplaces are considered urgent problems. .In particular, special software is developed for the development of enterprises with a diversified, multi-level or large-scale production structure in the practice of the oil and gas production system. In turn, innovative technologies are a necessary

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tool as a lever that unites functional and practical tasks such as extraction, processing and transmission in these enterprises.

Oil and gas industry of Uzbekistanoccupies a department in the field of important economy. It is one of the main sources of industry, gross domestic product, budget revenues and foreign exchange earnings, and plays an important role in the structure of industrial production and investment attraction. Development of the oil and gas industry The oil and gas industry, which employs about 1% of the working population of the country, allows to increase the efficiency of production, transportation, and processing, and most importantly, to provide consumers with natural gas continuously. It also allows to attract not only funds, but also investors with modern technologies and experience to the implementation of projects.The Ministry of Energy is gradually implementing large-scale projects for deep processing of natural gas, increasing its efficiency and transferring it to the market..

"Uzbekneftgaz" JSC has 118 mines, of which 85 are producing natural gas. In the remaining 33 mines, geological exploration works are being carried out. The share of JSC "Uzbekneftgaz" in hydrocarbon production in Uzbekistan is 63% in natural gas production, 67% in gas condensate production, and 13% in oil production. A total of 655.2 million dollars worth of investments have been allocated in 2022 for system operation at the level of demand, exploration of new mines and exploitation of wells, as well as modernization processes of the company's production facilities. Of this, 355.2 million dollars are accounted for by direct foreign investments and loans. [6]

**Relevance of the topic**

The oil and gas industry occupies an important place in the economy of our country. This sector is not only a source of energy, but also the main raw material base for the production of polymers, organic chemicals and nitrogenous mineral fertilizers needed for many industries.

If concrete measures are not taken to increase the hydrocarbon reserves, the existing reserves will decrease by 2 times in the next 10-15 years. Therefore, the management of "Uzbekneftgaz" company is carrying out practical work on increasing the volume of geological exploration and mining, modernizing mines

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and opening new ones, deep processing of oil and gas raw materials, and increasing investments. On the basis of world experience, the task was set to attract more investors to these works, to develop new mechanisms that would ensure the protection of the interests of the state and investors.

The President of the Republic of Uzbekistan signed the decision "On measures to provide the population and the economy with energy resources, to improve the financial health of the oil and gas network, and to improve its management system".[1]

In order to further develop the oil and gas industry, it is planned to implement 30 investment projects with a total value of 36.5 billion dollars for geological exploration, hydrocarbon extraction and deep processing until 2030. In addition, tasks were given to attract foreign investment and loans to the projects of modernization of the gas distribution system, implementation of gas consumption accounting and control system.[2]

In the last 20 years, the volume of natural gas production has increased by 8%, but the volume of its production by the country's enterprises has decreased by 29%. In 2012-2022, the confirmed natural gas reserves have decreased by 6%. the average indicator for filling the position was about 70% of the volume. In 2021-2022, as a result of the lack of financial resources and the lack of material and technical resources, the growth of natural gas production was only 42 percent compared to the forecast indicators.

## Research Methodology

Various methods were used in the process of conducting research on the topic of this article. Deductive methods were used in data collection and sorting. The results obtained as a result of the research were drawn as a final conclusion through the method of induction. Statistics have been widely used to compare financial and non-financial data and obtain research results. At the same time, the relationship between corporate governance and organizational behavior was studied through the method of analysis in scientific research. A synthesis method was used to calculate discussion summaries.

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Having tested the above methods in practice, we mention the following mechanisms as factors that improve the innovative state of an industrial enterprise:

- strengthening the innovative state - its important element is to carry out monitoring and monitoring of the impact of the environment in order to maintain a stable level of stability;
- regulation by the state - development of this mechanism is one of the main tasks of economic regulation. It represents the system of formation of management relations based on economic and social methods of formation of state influence on various parameters of the industrial enterprise;
- budget-tax - regulation of direct economic management is regulation based on the budget. A tax is a means of providing financial resources to cover the state expenses in bringing and applying innovations to the industrial enterprise.

**A collection of literature**

"Digital technology" in literature about innovations (various books, textbooks, scientific articles and monographs)There are many diverse opinions and observations about it, and there is no single approach to them. As a result of our studies and research, it became clear that the term "innovation" was first coined in 1995 by Don Tapscott in "The Digital Economy: It was used in the work "Network intelligence and risk". According to Don Tapscott, all processes in the digital economy are "based on a digital electronic system, namely the Internet, digital data and computer technology." Economic and social processes in society, business, finance - credit services and a number of other activities are carried out on the basis of electronic technologies that serve to implement the Internet (web) and digital communications.[1]

According to E. Brinolfsson and B. Kakhin, the digital economy includes innovations, as well as information processing innovations, products and services offered with the help of innovations.

[1] Don Tapscott. Evolving towards a Homogenous Society: The Risk of the New Digital Economy.

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According to B. Karlsson and R. Stow, in the developed concept, the influence of innovation on the process of transformation of the economy was developed and it was justified that innovations can play an important role in the development of not only the production sector, but also in the development of the processing system.

Issues related to the problems of improvement based on the application of innovations in industrial enterprises from scientists of the CIS countries: M. Kastells, B. Panshin, A. Sokolov, A. Kunsman, R. Bukht, R. Hicks, M. Polozhikhina, I. Strelkova, M. .Kalujsky, S.Plugotarenko, .R.Guseinov, and other scientists have been extensively covered in scientific research.

In our country, the scientific sciences related to proper and effective management of industrial enterprises are experiencing stable development and change based on historical roots. In our country, the issues of effective application of innovative technologies in the industrial sectors of the national economy, management and improvement of efficiency have been studied in detail by B.A.

**Analysis and results**

In the course of the research, the factors affecting the innovative development of oil and gas industry enterprises were analyzed graphically and statistically, and important criteria for prospective plans were mentioned. The results of this analysis "Bukhara Oil Refinery" we will learn in the example.

This plant produces petroleum products and is involved in the processing of 18 types of products. The annual design capacity of the first phase is designed to process 2.5 million tons of gas condensate. The project cost of the plant was almost 500 million dollars. The Bukhara oil refinery was built in cooperation with the French company Technip. This company participated in the construction of the plant with a contribution of 262 million dollars. Also, a consortium was formed by the Japanese companies Marubeni and Jay-Ji-Si. In addition, Kellogg (KBR), Chase Manhattan, Eximbank, Credit Commercial de France, BNP Paribas banks, Japan's Ministry of Trade and Industry, French insurance company Cofas contributed to the construction of the plant.Gama, one

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of the international contractors of Turkey, won the tender for the implementation of the projects.. [4]

The catalyst was replaced with the most modern type by the specialists of JSC "Uzbekneftgaz" in the gas oil hydrotreater of the "Bukhara" oil refinery. As a result, the production of Euro-4 and Euro-5 ecological class diesel fuel was launched for the first time in Uzbekistan.

In 2022, 945,900 tons of gasoline were produced at the Bukhara Oil Refinery, which became the highest figure in the 25-year history of the plant. For the first time in the history of the oil and gas industry of Uzbekistan, the sale of oil products was introduced on the basis of full market principles.

The first step in the project "Modernization and reconstruction of the Bukhara oil refinery", which has been planned for many years, was taken, and the companies "Uzbekneftgaz" JSC, "Honeywell UOP" (USA) and "SK E&C" (South Korea) The signing of the memorandum of understanding between The Bukhara Oil Refinery, which has the capacity to process 2.5 million tons of oil and gas condensate per year, was commissioned on August 22, 1997. Today, purposeful work on the development of this plant is being carried out by attracting large investment projects.[5]

High-octane gasoline (AI-80, AI-91, AI-92, AI-95, AI-98), diesel fuel (ECO, Euro-4, 5), jet fuel (Djet A-1), fuel oil, liquefied gas, petroleum products such as sulfur, pyrolysis gasoline, hydrocarbon solvent are produced.

Delivery of raw materials to the plant is planned through pipelines and railways. The plant has the following technological devices:

- "Oil and gas condensate extraction under atmospheric pressure" technological device (AT) with an annual processing capacity of 2,500,000 tons;
- "Oil Desalination and Dewatering" (ELOU 1, 2) technological device with an annual processing capacity of 1,500,000 tons;
- "Hydrogen purification of general naphtha" (GOB) technological facility with an annual processing capacity of 771 thousand tons;
- "Hydrogen treatment of gas oil" (GODT) technological device with an annual processing capacity of 861,000 tons;
- "Catalytic reforming" (CCR) technological device with an annual processing capacity of 532.8 thousand tons;

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- "Kerosine Demercaptan" technological device with an annual processing capacity of 300,000 tons;

In addition, there are technological devices such as "Purification of gases using amine", "Evaporation of sour waters", "Sulphur extraction", "Separation of liquefied gases into fractions".[6]

The plant produces 641,000 tons of gasoline (AI-80, AI-91, AI-92, AI-95, AI-98), 1,026,600 tons of diesel fuel (ECO, Euro-4, 5), 300,000 tons of aviation kerosene ( Jet A-1, hydrocarbon solvent), 480 thousand tons of fuel oil (M-40, M-100) and other types of oil products are produced.

We remind you that in 2020, the Bukhara Oil Refinery launched the production of "Euro-4, -5" diesel fuel for the first time in the republic. In addition, during this period, the production of "AI-95" gasoline with improved quality under the "QuWatt" brand was mastered.

Below we will touch on some numbers about the products and their weight at BNQIZ. The data is for 2022-2023.

**Table 2 Products produced in 2022-2023 at the Bukhara Oil Refinery**

| Product type | amount of products, million tons | |
|---|---|---|
| | 2022 year | 2023 year |
| ecological diesel | 317,372 | 331,869 |
| Euro-4 | 94,944 | 102,528 |
| Euro-5 | 53.91 | 61.87 |
| liquid hydrocarbon | 635.7 | 659.6 |
| gasoline | 389.6 | 410.5 |

Coming to the analysis of the above, we have witnessed a certain amount of growth during the past 2 years. These 5 listed products are the largest compared to others. The type of product with the largest share in BOF was gasoline and liquid hydrocarbons. Both gained 0.05% and 0.04%. And in the last places

We can see that Euro-5 (0.15%) and Euro-4 (0.9%) have achieved growth. Because they were considered the newest type of product and the growth was accordingly.

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In BOF, in 2022, the economy of 8711.6 thousand kWh (106.8 percent) of electricity and 1105.7 thousand m3 (110.1 percent) of fuel gas was achieved. In turn, solar photoelectric plants with a total capacity of 255 kW and solar water heating devices with a total volume of 12.2 thousand liters were put into operation at the plant.

In May 2023, production of automobile gasoline at Uzbekneftgaz enterprises amounted to only 23,200 tons. This indicator is 51.2 thousand tons less than in May 2022. According to the company, such indicators are related to the modernization and planned maintenance works at the Bukhara oil refinery between May 10 and June 10, 2023. The last time such works were carried out at the plant was in 2018.

Now the Bukhara oil refinery has increased the daily production of gasoline from 2,500 tons to 3,000 tons. At the same time, despite the work done, Uzbekneftgaz JSC plans to produce only 995,800 tons of gasoline by the end of this year.

Now we will mention the largest tax subjects in our country and among them the contribution of BOF.

**Enterprises with the best working capital in the production sector of Uzbekistan in 2022 Table 1**

| Company name | Turnover (trillion soums) | Tax payments (trillion soums) | Benefits (trillion soums) |
|---|---|---|---|
| Uzbekneftgaz | 11 942 | 4 321 | 68.5 |
| UzBAT | 4 039 | 2 196.3 | 138.8 |
| UzAuto Motors | 33 068.3 | 2 052.1 | 702.9 |
| **Bukhara Oil Refinery** | **8 094.4** | **1 244** | **24** |
| Shurtan Gas Chemical Complex | 3 331.3 | 1 069.3 | 3.8 |
| Tolimarjon IES | 2114.6 | 249.5 | 0.4 |
| Kyzylkumcement | 1645.4 | 233.8 | 19.2 |
| "Uzbekkumir" | 1232.3 | 229.3 | 33.9 |
| Makham Chirchik | 2226.4 | 321.8 | 78.2 |

It had the highest working capital among industrial enterprisesAfter Uzbekneftgaz and UzAuto Motors, we can see that BOF takes the next place. This means that the share of this enterprise in the GDP is also high. In terms of

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paying taxes, it ranks 4th after UzBAT. The Uzbekneftgaz company attracts attention as the largest tax payer among industrial enterprises.

**Conclusions and Suggestions**

There are enough problems in the oil and gas network, which are mainly related to technical and technological updates. Due to the insufficient increase of reserves, the forecast of natural gas extraction and production of oil products in 2018 was not fulfilled sufficiently. 67% of the forecast for the drilling volume in the geological-exploration process has been fulfilled. If these works were completed, it would be possible to increase the reserve even more. Also, the forecast of operational drilling works was fulfilled by 59% and the forecast of the number of completed wells by 50%.

A republican working commission was formed on the implementation of the concept of development of the oil and gas network of the Republic of Uzbekistan until 2030. Republican Labor Commission (A.N.Aripov) within one month:

a) approves the "roadmaps" for the implementation of the concept of development of the oil and gas network of the Republic of Uzbekistan until 2030, taking into account the ongoing reforms, and pays special attention to the following:

- increasing the volume of extraction of hydrocarbon raw materials;
- modernization of the gas transport system;
- improvement of calculation and control of extraction, processing, supply and sale of natural gas;
-critical study and optimization of investment projects, as well as improvement of their implementation mechanisms;
- strengthening financial discipline and improving price formation in oil and gas network enterprises;

b) approves the composition of working commissions for each direction of the concept of development of the oil and gas network of the Republic of Uzbekistan until 2030;

v) takes measures to attract international financial institutions, financial organizations of foreign governments (IMFs/IOMs) and consulting companies to implement the concept of development of the oil and gas network of the

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Republic of Uzbekistan until 2030 in cooperation with the working commissions being established;

g) the number of management staff in the Ministry of Energy does not exceed 20 staff units, funds of the Fund for the Development of the Fuel and Energy Network, funds (grants) of the Ministry of Energy of the Republic of Uzbekistan, out-of-budget funds of the Fuel and Energy Network ensures the establishment of a project office for coordinating the reform of the oil and gas network financed from the

As a result of the conducted research, the following conclusions related to the use of important economic natural gas as a raw material in the national economy and not as a fuel, and by introducing innovative technologies in branch enterprises, the following conclusions can be reached regarding the economic recovery of financially unstable enterprises formed:

1. We propose to improve the infrastructure of the oil and gas enterprises operating in our country, and at the same time introduce new innovative products to the oil and gas sector, as well as to the process of extraction and production of oil reserves.

2. The method of integral assessment of the dynamics of economic growth in processing industries was improved based on the method of index comparison of the intensive and extensive factors of economic growth based on indicators of labor productivity, return of funds. According to this methodology, the general economic growth index in processing industry sectors has been increased by 1.07 coefficient.

3. If we use the experience of advanced industrialized countries in modern innovative technologies and their effective use, the experience of using innovative technologies in the Republic of Korea is especially important. In this regard, one of the important priorities in the introduction of modern innovative and innovative technologies in our country, we are proposing a strategy aimed at the introduction of techniques and technologies of foreign projects.

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