



DEVELOPMENT OF INDUSTRIAL ENTERPRISES IN UZBEKISTAN ON THE WORLD MARKET

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ANNOTATION

The article considers the current situation of the industry of Uzbekistan in recent years. The current state and position of the oil and gas industry is considered. The importance of the oil and gas industry for the economic development of Uzbekistan is noted. A comparison of the amount of funding for research and development among domestic and foreign scientists. The analysis of the global oil and gas industry directions, including Uzbekistan. The states with the highest rates in areas in the oil and gas industry are noted. Including energy generation, crude oil and refining of petroleum products. The main tasks of technological development for the oil and gas complex of Uzbekistan are identified.

KEY WORDS: *innovation, industry, world industry, technological development.*

РАЗВИТИЕ ПРОМЫШЛЕННЫХ ПРЕДПРИЯТИЙ В УЗБЕКИСТАНЕ НА МИРОВОМ РЫНКЕ

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Аннотация

В статье рассмотрены настоящее положение промышленности Узбекистана за последние годы. Рассмотрено современное состояние и положение нефтегазовой отрасли. Отмечена значимость нефтегазовой отрасли для экономического развития Узбекистана. Выполнено сравнение объемов финансирования научных исследований и разработок среди отечественных и иностранных ученых. Приведен анализ мировой нефтегазовой промышленности направлениям и в том числе Узбекистана. Отмечены государства с наивысшим показателем по направлениям в нефтегазовой промышленности. В том числе по выработки энергии, сырой нефти и переработки нефтяных продуктов. Выделены основные задачи технологического развития для нефтегазового комплекса Узбекистана.

Ключевые слова: инновации, мировая промышленность, технологическое развитие.

O'ZBEKISTONDA SANOAT KORXONALARINING RIVOJLANISHI DUNYO BOZORIDA

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"Sanoat iqtisodiyoti" kafedrasida katta o'qituvchisi

I. Karimov nomidagi Toshkent davlat texnika universiteti

Annotatsiya. Maqolada O'zbekiston sanoatining so'nggi yillardagi holati ko'rib chiqiladi. Neft va gaz sanoatining hozirgi holati va holati ko'rib chiqiladi. O'zbekistonning iqtisodiy rivojlanishi uchun neft va gaz sanoatining ahamiyati ta'kidlandi. Mahalliy va xorijiy olimlar o'rtasida tadqiqot va ishlanmalarni moliyalashtirish hajmini taqqoslash. Jahon



neft va gaz sanoatining, shu jumladan O'zbekistonning yo'nalishlarini tahlil qilish. Neft-gaz sanoatida eng yuqori ko'rsatkichlarga ega davlatlar qayd etildi. Bunga energiya ishlab chiqarish, xom neft va neft mahsulotlarini qayta ishlash kiradi. O'zbekiston neft va gaz kompleksi uchun texnologik rivojlanishning asosiy vazifalari belgilab berilgan.

Kalit so'zlar: innovatsiya, korxonalar sanoati, jahon sanoati, texnologik rivojlanish.

INTRODUCTION

In recent years, the oil and gas complex of Uzbekistan has faced a number of new economic and political threats and challenges, forcing to review and reformulate some of the provisions, assessments and guidelines of scientific and technological development. In particular, ensuring technological independence of the industry and sufficient competencies in all types of activities critically important for its sustainable development have come to the fore in a number of strategic goals.

In addition, sectoral features of the current moment should be taken into account. So, in oil refining, in the conditions of stagnation of demand in domestic and foreign markets, development does not imply volume growth, but quality improvement and expansion of the product range, which necessitates a technological breakthrough to ensure competitiveness. In the gas industry, where the opportunities for expanding its presence in traditional markets are also limited, one of the promising areas is the development of the domestic market, including the use of small production and logistics complexes for the gasification of remote territories and the wider use of motor gas in transport.

LITERATURE REVIEW

The oil and gas industry in the economy of Uzbekistan is one of the priority areas, since it largely ensures the well-being of the population of this country and affects not only the economic development of the country, but also its security and energy independence [1], therefore, the formation of the tasks facing the oil and gas industry of Uzbekistan is dictated by the need for the progressive development of the economy and is associated with solving problems of ensuring the cost-effective use of the republic's fuel and energy complex [2], since oil and gas occupy the leading place in the structure of the country's primary fuel and energy resources (96%), and coal (2, 5%) and hydropower (0.8%) occupy a secondary position [3].

The modern oil and gas complex (NGK) is one of the priority areas of state innovation policy and represents a key sector of the economy that ensures the country's dynamic socio-economic development, primarily due to a significant share of oil and gas revenues in the state budget. NGK includes high-tech activities in the field of exploration, extraction of natural resources of oil and gas, their processing, transportation, storage and sale of a wide range of products. In modern conditions of a deteriorating mineral resource base, including an increase in the share of hard-to-recover oil reserves in general, a difficult macroeconomic situation, the rapid complication of production processes, and the increasing demand for new scientific knowledge and technology, NGK maintains a leading position in world energy markets.

RESEARCH METHODOLOGY

A systematic and integrated approach to the study, statistical methods for analysis were used.

The analysis shows that the additional growth in industrial production in 2010 was 34.2%, in 2015 - 16.2%, and in 2019 - 40.7%, the growth rate over these years can be seen in the following table (Table 1).

Table 1

The state of GDP and the volume of industrial production of the Republic of Uzbekistan, (in trillion soums) [4]

Indicators	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
GDP	74,0	97,0	120,2	144,6	177,2	210,2	242,5	302,5	406,7	511,8
Industrial products	38,1	47,6	57,5	70,6	84,0	97,6	111,9	148,8	235,3	331,0

Despite the measures taken, a long-term shortage of oil is planned in the future to meet the needs of the Uzbek economy. The solution to this problem is seen in the import of this type of raw material or the replacement of the shortage of oil products in the national economy by importing the finished product. Since Russia and Kazakhstan have great potential for oil export, the solution to the emerging problem is seen in the import of oil from these countries into Uzbekistan with its subsequent processing. In addition, it is necessary to establish systematic work on exploration for hydrocarbon raw materials throughout the country [5].

The country's top leadership has set the goal of raising GDP for the coming 10-15 year period at least 7-8% per year. This goal cannot be achieved without proper development of the oil and gas sector, supplying the country's economy not only with energy resources, but also with raw materials for raising the chemical and petrochemical industries to a new level [6], without introducing hydrogenation processes in oil refining, without increasing the depth of oil refining. Oil and gas industry has a delayed coking unit,



which allows oil to be refined to a depth of 73 - 75%. Further deepening is possible during the construction of new recycling facilities - such as catalytic cracking, hydrocracking. These processes, as the world practice of oil refining shows, serve not only to deepen oil refining, but have a great influence to strengthen the raw material base of the petrochemical industry. Based on this, it can be concluded that the primary task of oil refining in Uzbekistan is the construction of a catalytic cracking unit of sufficiently large technological capacity with the use of world-class technology, which should combine the efforts of all the country's refineries, in particular, to ensure the raw material base of the new building. Thus, the task of reforming the oil and gas, oil refining and petrochemical sectors of the country is ripe, and it can be accomplished by mobilizing domestic resources and subject to the attraction of foreign investment.

As shown in Table 2, 14,715 million tonnes of oil energy equivalents have been produced globally in terms of total energy production. This figure is 1.5% higher than in 2018. It should be noted, however, that in the context of the coronavirus pandemic, results are expected to decline significantly this year due to a revised forecast for 2020.

Among the countries, China is the leader in energy production. At the end of 2019, 61.1% of the energy produced by all Asian countries and 18.2% of the world's countries came from China. At the same time, 4.4% more energy was produced in 2019 compared to 2018, which is exactly 2,684 million tonnes of oil equivalent. The next places are occupied by the United States and Russia, which produced 2,303 and 1506 million tonnes of oil energy equivalent by the end of 2019, respectively.

Table 2
Total energy production (million tonnes of oil equivalent) [7]

№	Name of countries	1990	2000	2010	2015	2016	2017	2018	2019	2020/ 2019 difference (+/-, %)	2020/ 2022 difference (+/-, %)
1	Worldwide	8794	10011	12771	13777	13720	14027	14505	14715	1,5	47,0
2	France	112	131	136	139	131	130	136	132	-2,7	1,2
3	Germany	186	135	129	120	116	115	110	103	-5,9	-23,6
4	Great Britain	208	272	148	118	120	120	124	122	-1,9	-55,3
5	Russia	1293	978	1279	1334	1373	1429	1477	1506	2,0	54,0
6	Uzbekistan	39	55	55	55	50	51	54	53	-1,0	-3,4
7	USA	1647	1662	1725	2028	1921	1998	2176	2303	5,9	38,5
8	Argentina	48	83	80	74	76	74	76	81	6,5	-2,4
9	Brazil	105	148	248	278	285	294	296	310	4,7	109,4
10	China	881	1124	2236	2516	2364	2454	2570	2684	4,4	138,9

In the future, JSC "Uzbekneftgaz" needs to increase the achieved results, in particular, the development of such a segment as gas chemistry. A further increase in the deep processing of oil and gas products will allow the production of new types of products and thereby increase the production of value-added products. In general, this is facilitated by our industrial potential, mineral resources of Uzbekistan and the quality of raw materials obtained from them.

Table 3
Crude Oil Production (Million Tonnes) [7]

№	Name of countries	1990	2000	2010	2015	2016	2017	2018	2019	2019/ 2018 difference (+/-, %)	2020/ 2000 difference (+/-, %)
1	Worldwide	3175	3630	3994	4329	4389	4392	4469	4438	-0,7	39,8
2	France	3,5	1,9	1,2	1,1	1,0	1,0	0,9	0,9	-2,7	-73,8
3	Germany	5,5	4,4	3,8	3,6	3,7	3,7	3,4	3,2	-6,8	-42,3
4	Great Britain	91,6	126,4	63,0	45,3	47,4	46,5	50,6	51,5	1,8	-43,7
5	Russia	523,7	321,7	504,1	533,7	547,7	546,4	555,5	559,9	0,8	6,9
6	Uzbekistan	2,8	7,7	4,0	2,8	2,5	2,4	2,5	2,4	-6,4	-15,0
7	USA	413,3	353,0	334,2	566,8	545,2	575,2	671,2	744,7	11,0	80,2
8	Argentina	26,1	41,4	35,3	30,8	29,5	27,9	27,6	30,4	10,0	16,6
9	Brazil	32,7	64,1	107,4	127,5	131,8	137,9	135,7	145,6	7,3	344,9
10	China	138,3	163,1	203,8	216,8	203,0	196,1	193,6	195,3	0,9	41,2

As can be seen from Table 3, by the end of 2019, crude oil production in the world amounted to 4,438 million tons, which is 0.7% less than in 2018 and 39.8% more than in 2000. But of course, you need to consider that the requirements for crude oil production and its refining in 2000 were much less. In terms of crude oil production in 2019, the United States made a sharp jump by as much



as 11% or by 74 million tons than in 2018. The next places were taken by Russia and Saudi Arabia, respectively 560 and 545 million tons of crude oil were produced. Unfortunately, in recent years, the turnover of crude oil production in Uzbekistan has decreased. In 2019, 2.4 million tons of crude oil was produced, i.e., 6.4% less than in 2018 and 15% less than in 2000.

Uzbekistan has significant potential for the development of industry, however, only the proper development of the oil and gas sector, in our opinion, will solve the problem of raising the economy of Uzbekistan to a new level, and maintain the successes achieved in other sectors of the economy. But the production of refined products requires new innovative solutions. In the table below you can see the volume of production of oil products in the world and in the leading countries of the world.

Table 4
Production of Oil Products (Million Tons) [7]

№	Name of countries	1990	2000	2010	2015	2016	2017	2018	2019	2019/ 2018 difference (+/-, %)	2019/ 2000 difference (+/-, %)
1	Worldwide	3156	3594	3962	4180	4209	4295	4348	4339	-0,2	37,5
2	France	78,5	88,6	71,1	60,2	59,4	59,3	55,6	50,7	-9,0	-35,5
3	Germany	105,8	116,0	101,5	99,2	100,2	101,9	97,7	97,4	-0,3	-7,9
4	Great Britain	88,7	87,7	74,4	62,0	61,1	61,1	59,4	59,9	0,7	-32,5
5	Russia	267,7	176,8	246,1	278,1	269,9	280,4	285,2	284,1	-0,4	6,1
6	Uzbekistan	7,9	6,9	3,9	2,7	2,5	2,4	2,5	2,3	-6,4	-70,8
7	USA	754,6	848,8	834,1	860,2	869,6	883,3	900,3	890,4	-1,1	18,0
8	Argentina	23,1	30,9	31,5	32,4	31,0	30,4	26,3	26,3	-0,3	13,7
9	Brazil	61,1	85,0	97,7	108,5	100,7	97,6	95,2	102,0	7,2	66,9
10	China	145,8	232,7	400,9	510,5	533,9	564,3	601,7	642,6	6,8	340,8

In table 4, by the end of 2019, the production of oil products decreased in the world and amounted to 4,339 million tons. In percentage terms, Iran has the largest loss -29.9%, which is 26.9 million tonnes less than in 2018. In the context of the outbreak of the pandemic, only China was able to increase production of oil products by 40.9 million tons. This figure was almost 3.5 times more than in 2000. Uzbekistan for the production of oil refined products in 2019 took a step back and executed volumes less by 6.4%, which amounted to 2.3 million tons. Unfortunately, this figure is decreasing from year to year.

The fall in oil demand due to the spread of COVID-19 and the imposition of restrictive measures to combat it, combined with a tough price war between producers, have led to dire consequences for the oil markets - it seems that the deepest crisis in the history of the global oil industry is now unfolding.

The main blow to the oil market was caused by an unprecedented drop in demand - by 30% in April and by almost 10% on average for the year (9.3 million barrels per day, according to IEA estimates). At the same time, the main drivers of world consumption - China and India - are unlikely to be able to provide additional demand for oil in 2020.

An unprecedented reduction in oil demand with an excess of its supply led to a tremendous imbalance that market participants had not yet encountered before, which caused a record drop in prices. From January to mid-April 2020, the Brent price fell 3.5 times, and WTI futures were sold at a negative price for the first time in the history of exchange trading, clearly demonstrating the vulnerability of the modern pricing system.

The situation on the market was greatly complicated by the relationship between oil producers. However, an extraordinary drop in demand and prices forced manufacturers to sit at the negotiating table. The result is an agreement to reduce production by two years between OPEC + countries (including by 8.2 million barrels per day. On average by 2020) and, for the first time in history, countries outside the coalition (USA, Canada , Brazil, etc. about the intention to reduce production by 5 million barrels per day, although these countries have not taken any strict obligations).

The agreed reduction volumes are approximately in line with current estimates of average annual decline in demand, however, “the devil is in the details”: the reduction should be enough so that the storage is not overfilled and prices do not go into the negative zone, but not more, but for successful implementation Agreements require coordinated work of all market participants. Failure to comply with the declared reduction in production may lead to overstocking the market and overflowing of oil storage facilities around the world, and, consequently, to a further reduction in prices.



In fact, the agreement avoided the worst case scenario, but it does not guarantee a quick stabilization of the market. In all scenarios, prices in 2020-2021. will not return to the pre-crisis level and will be in the range of 16-30 dollars per barrel. depending on the speed of demand recovery and the strict compliance with the production reduction agreement. In the short term, the main focus of oil companies around the world will be a radical reduction in costs and the conservation of part of the well stock against the backdrop of commitments on quotas and under pressure from low prices. Global investment in production in 2020-2021 will decrease by 45%, which in the future may be fraught with a crisis of underinvestment, lack of oil in the market and the next price cycle.

The oil industry suffered the most from the coronacrisis. The main destabilizing factor for the oil market was a sharp decline in oil demand, primarily from the transport sector (automobiles and air transportation), which turned out to be the most vulnerable due to quarantine measures around the world.

In China, for example, demand for motor fuels at the height of the epidemic in January-February fell by 13%, judging by official data, and by 20-30%, according to independent estimates. In the USA, oil supplies to refineries from March 6 to April 10 decreased by 20%. In Europe, the reduction in motor fuel consumption in some countries amounted to 70% 7, in Russia, the decrease in demand by mid-April is estimated at 40%. In general, according to IEA estimates, global oil demand in April may decrease by a record 29 million barrels per day compared to April last year. - This is the largest drop in demand recorded in the entire history of the global oil market (Figure 1). At the same time, the previous decline in consumption was caused by a multiple increase in oil prices, but now the situation is reversed - even low oil prices can not spur demand, due to the fact that more than 4 billion people are limited in mobility due to total lockdowns.

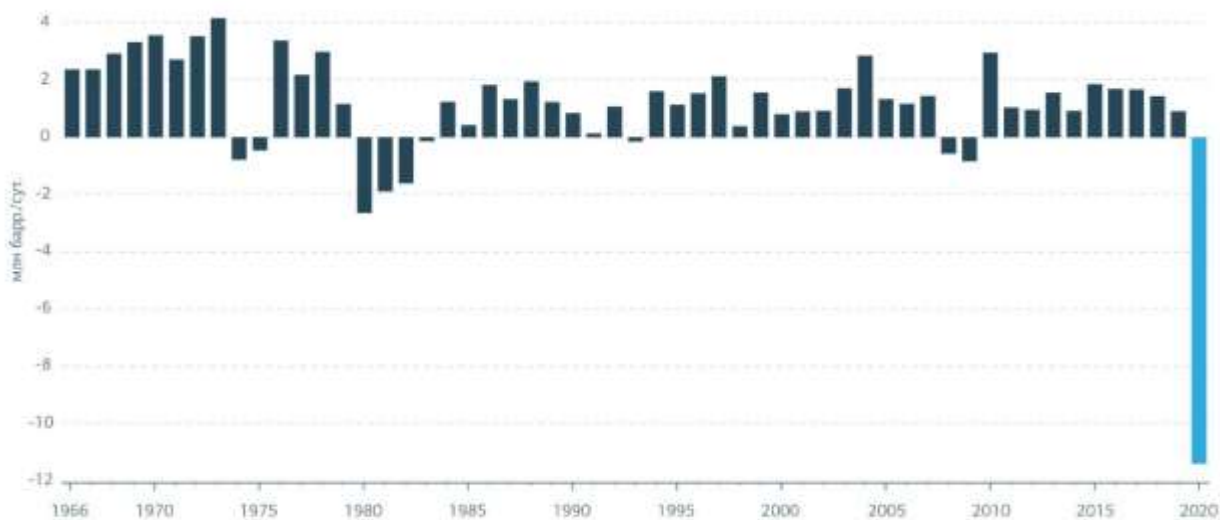


Figure 1 - Annual change in oil demand, 1966-2020 [8]

The Republic of Uzbekistan needs to expand the range, quality and volume of production of oil products. It can be concluded that the development of oil refining in the Republic should go in stages along the way:

- additional loading of oil refining capacities at existing refineries with raw materials of own production and import;
- improving technology and deepening oil refining;
- introduction of innovative technologies in oil refining based on local resources;
- increase the range of products;
- lower production costs and resource savings;
- introduction of environmentally friendly technologies, etc.
- increasing the capacity of oil refineries, with the achievement in the near future of 0.1 tonnes of refined oil per capita.

Only in this case is it possible to meet the annual growth rates facing the country's economy. The tasks are big, however, without improving the country's oil industry, without fully meeting the needs of the economy with high-quality oil products, there is no further prosperity of the country.

As part of the functioning of the quality management system, goals are realized that are aimed at maintaining the quality policy adopted by the management of the company. In particular, scientific, technical and design products are manufactured in accordance with the requirements of customers, the proportion of objects designed using modern information technologies is increasing.



These ways of developing the research and design and research direction in the oil and gas industry are designed to ensure further economic growth of the economy, increase the profitability of work, and gain new positions in the world market. The state must set as its goal the solution of the following tasks:

- increasing the profitability of the industry through the implementation of science-intensive projects for the commissioning of oil and gas fields, the development of feasibility studies, the deep extraction of valuable hydrocarbons and the development of new types of products, reconstruction and development of gas processing capacities;
- further improvement of oil and gas processing activities through the introduction of information technology into the production process, and comprehensive training and retraining of personnel;
- the introduction of modern technologies for the design of facilities and the conduct of research work;
- constant improvement of the image of Uzbekistan as a research and design and survey state in the oil and gas industry and in priority areas of science, technology and technology;
- increasing the level of competitiveness and the relevance of the results of research and design and survey work in the world;
- development of various forms of cooperation with organizations and enterprises in order to jointly solve scientific and practical problems and introduce scientific developments and projects into production;
- expansion of scientific and technical cooperation with domestic and foreign companies, firms for joint competitive development;
- carrying out scientific and practical conferences, seminars, participation of researchers in the work of international conferences, symposia, exhibitions.

Implementation of innovations affects various indicators of the enterprise's activity: consumption rates of consumed materials and energy; volume of manufactured products; labor productivity; the number of employees; production cost; profit; profitability; return on assets, etc. Creation, development and implementation of new technologies can help companies overcome the negative effects of the global crisis and reach a new level of development.

To increase the innovative activity of oil and gas enterprises, it is necessary to create a favorable climate for the expansion of innovative activity, including the creation of appropriate infrastructure, to organize training and retraining of personnel for innovative activities.

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