



Article

Economic Analysis of The Current State of The Oil and Gas Industry Enterprises of Uzbekistan

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Abstract: The oil and gas industry remains a cornerstone of economic development and energy security in many nations. In Uzbekistan, the sector's contribution is strategically vital, particularly amid global shifts toward sustainable energy sources. Despite substantial investment and output, there is limited integrative analysis of Uzbekistan's oil and gas industry's development trends in relation to global benchmarks. This study aims to evaluate the current state, investment trends, and production dynamics of Uzbekistan's oil and gas sector, while comparing them to international standards. The analysis shows increased production in recent years, with total output in 2023 reaching 39.33 trillion soums and natural gas production amounting to 46.7 billion cubic meters. Investments have supported infrastructure development, energy diversification, and localization efforts, leading to cost savings and job creation. The study offers a comprehensive multi-method assessment combining national statistics, international investment comparisons, and sector-specific outputs. Findings underscore the importance of continuous innovation, strategic investment, and regional infrastructure modernization to sustain growth and energy independence in Uzbekistan's oil and gas industry.

Keywords: : oil and gas, industry, sector, investment, production volume, renewable sources, electricity grids, energy efficiency.

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1. Introduction

The oil and gas industry is of great strategic and political importance for countries around the world. Political and economic changes in the world in recent years and the efforts of developed countries to gradually abandon traditional (fossil) fuels require a deeper consideration and analysis of the future development and processes of our country's oil and gas industry [1].

According to foreign publications, in order to maintain the current level of production, it will be necessary to invest \$ 17 trillion in the global oil and gas sector by 2040, which, in turn, will account for 1/3 of all innovative investments in the world's fuel and energy sector. To this end, it is possible to make a significant contribution to the further development of the economy by implementing mainly industry-specific scientific, technological and promising innovation and investment projects, important and profitable innovations, various startup projects, innovating leading production sectors, modern technical and technological modernization, and introducing domestic and foreign innovative technologies [2].

2. Materials and Methods

The article uses various methods of studying, reworking and analyzing existing literature, theoretical and practical reports for revealing the development trends and problems of the oil and gas industry [3].

The research widely uses the methods of analysis: comparison, grouping, random selection, induction and deduction, scientific abstraction analysis, systematic and comparative analysis, monographic, statistical and economic analysis, expert assessment. These methods serve to open up ways to effectively improve the activities of the oil and gas industry [4].

3. Results

Developed countries of the world are allocating investments to ensure the development of the oil and gas industry in various options (Figure 1).

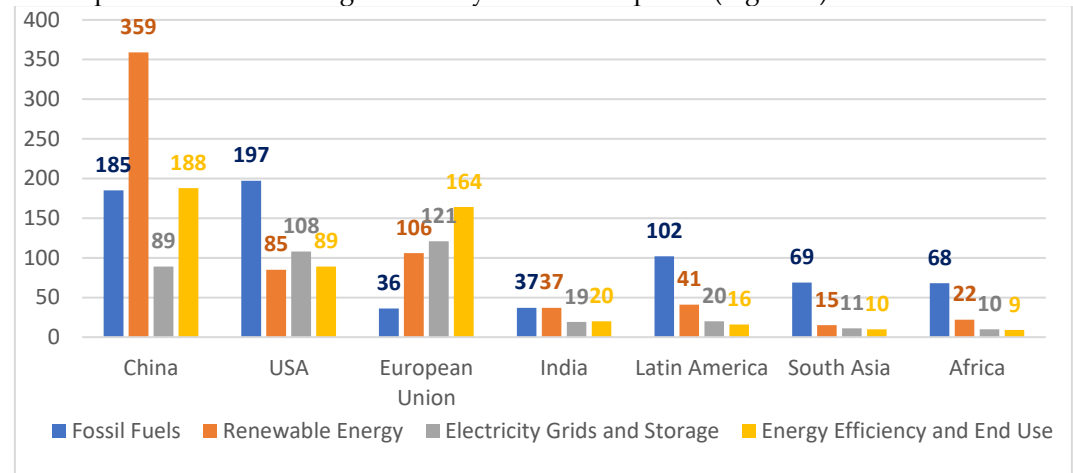


Figure 1. Global investments in sectors in 2024 (billions, US dollars) [1]

These countries invested in the same fossil fuels in 2024: China 185 billion USD, the United States 197 billion USD, the European Union 36 billion USD, India 37 billion USD, Latin America 102 billion USD, South Asia 69 billion USD, and African countries 68 billion USD. From the bar chat, it can be seen that in 2024, the amount of investment in fossil fuels increased slightly in the European Union, Latin America, and India compared to 2019. From the data in Figures 1 and 2, it can be concluded that the policies aimed at reducing the use of fossil fuels in the countries listed are yielding positive results [5].

In 2024, China invested 359 billion USD, while United States allocated 85 billion USD for renewable energy. Furthermore, 106 billion USD was invested by European Union which was nearly 5 times higher than that of South Africa. Regarding to other countries, India and Latin America preferred to invest almost the same amount of money with the respective figures of 37 and 41 billion USD, whereas the figure of Africa made up 22 billion USD [6].

The figure illustrates investments in low-emission fuels and nuclear or other clean energy sources across global regions. China leads in nuclear energy investments (18 units), while the USA and EU show balanced contributions. India and South Asia lag in both categories, indicating regional disparities in clean energy development priorities (Figure 2)

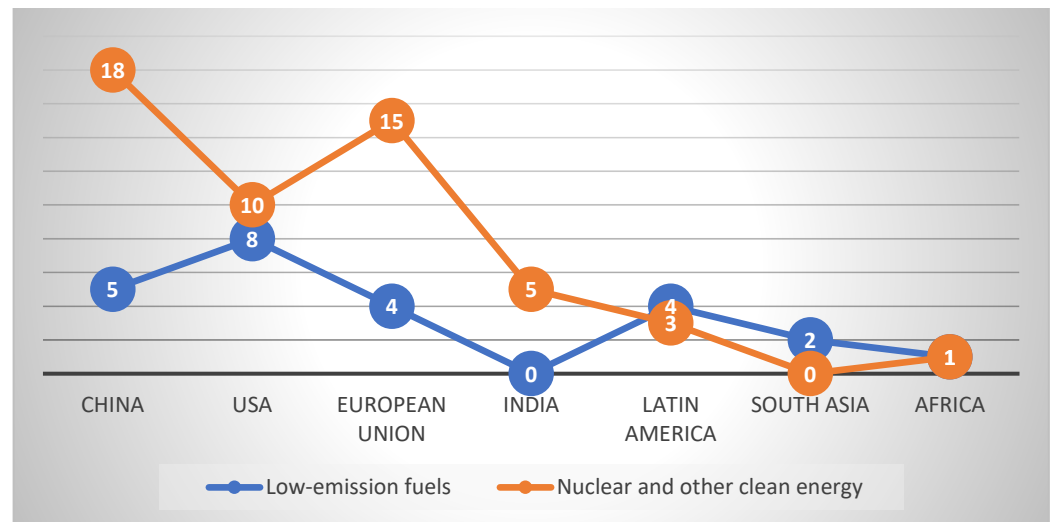


Figure 2. Investments in clean energy sources by developed countries in 2024 (billions, US dollars)

Figure 2 shows that in 2024, In recent years, investments in nuclear and clean energy sources have seen a substantial increase compared to 2019, with China leading at 18 billion US dollars, followed by the European Union at 15 billion, the United States at 10 billion, India at 5 billion, and Latin America at 3 billion. It is evident that Uzbekistan, owing to its abundant natural resources and fuel reserves, holds a significant position in the global oil and gas market. According to data from 2023, the total output in the oil and gas sector reached 39.33 trillion soums, while the electricity sector generated 32.96 trillion soums—representing a 109% increase compared to the targets set at the beginning of the year [7].

In 2024, Uzbekistan produced a total of 46.7 billion cubic meters of natural gas. The production of liquid hydrocarbons reached 2.83 million tons, comprising 770.5 thousand tons of crude oil and 2.06 million tons of condensate. To support these outputs, geological and technical operations included drilling activities in 146 wells, major repairs in 183 wells, and construction and installation works at 28 technological facilities across the country [8].

Furthermore, since the beginning of the year, Uzbekistan has produced 882.6 thousand tons of liquefied gas, 1.33 million tons of gasoline, 1.01 million tons of diesel fuel, 148.4 thousand tons of fuel oil, 409.0 thousand tons of polyethylene, and 82.2 thousand tons of polypropylene. In terms of electricity generation, a total of 78.0 billion kilowatt-hours (kWh) was produced. Of this, 69.6 billion kWh came from thermal power plants and energy centers, 6.9 billion kWh from hydroelectric plants, 893.3 million kWh from block power plants, and 572.2 million kWh from solar power stations [9].

Let us also analyze the dynamics of these statistics over the years (Figure 3).

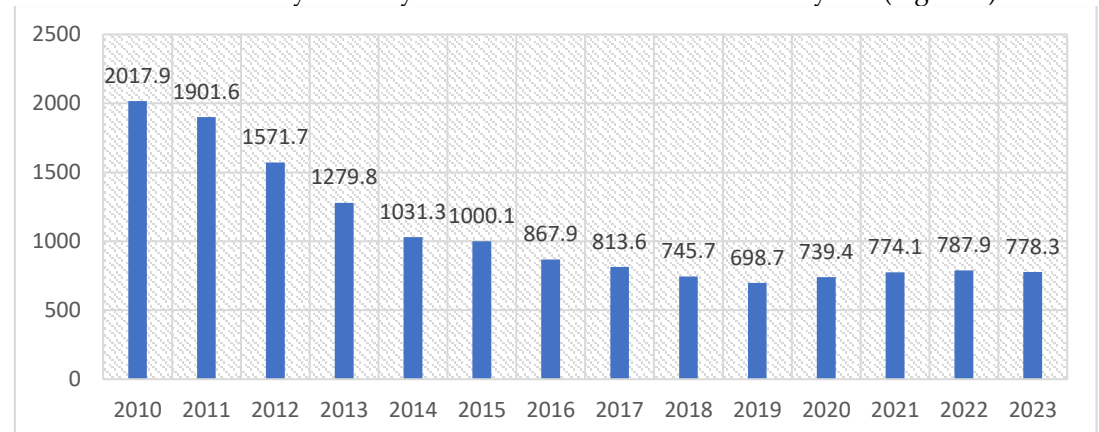


Figure 3. Dynamics of oil production in Uzbekistan in 2010-2023 (thousand tons)

As illustrated in Figure 3, oil production in Uzbekistan experienced a steady decline from 2010 to 2019. However, a slight upward trend was observed between 2019 and 2022. Specifically, production increased from 698.7 thousand tons in 2019 to 739.4 thousand tons in 2020, followed by 774.1 thousand tons in 2021 and 787.9 thousand tons in 2022, indicating gradual growth over this period. Nevertheless, in 2023, oil production declined slightly to 778.3 thousand tons, representing a decrease of 9.6 thousand tons compared to the previous year [10].

The figure presents natural gas production in Uzbekistan from 2010 to 2023. The data reveals a general declining trend, with production peaking at 65,958.5 million m³ in 2010 and decreasing to 46,710.4 million m³ by 2023. Notable recoveries occurred in 2017 and 2018, followed by continued fluctuations (Figure 4).

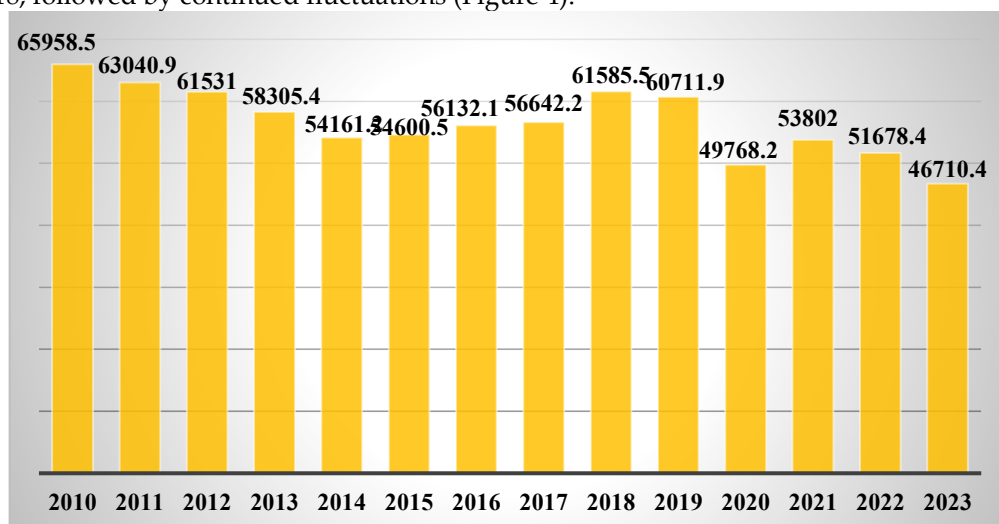


Figure 4. Dynamics of natural gas production in Uzbekistan in 2010-2023 (mln.m³)

According to the data presented in Table 3, natural gas production in Uzbekistan showed a declining trend between 2010 and 2014. This was followed by a moderate increase from 2015 to 2018. In subsequent years, the trend became unstable: in 2019, production reached 60,711.9 million cubic meters; it fell to 49,768.2 million in 2020, rose to 53,802 million in 2021, dropped again to 51,678.4 million in 2022, and further decreased to 46,710.4 million cubic meters in 2023 [11].

4. Discussion

Despite this, energy supply to consumers in 2023 remained significant, with 66.1 billion kilowatt-hours (kWh) of electricity distributed (19.4 billion kWh per capita), along with 42.3 billion cubic meters of natural gas (10.4 billion cubic meters per capita). To meet demand and improve efficiency, 55 power units at thermal power plants underwent major overhauls, including 14 power units (such as those at the New Angren TPP), 31 boilers, 9 combined-cycle gas turbines, and 1 gas turbine unit [12].

In 2024, a total of 831 kilometers of main and 29,556 kilometers of distribution power transmission networks were renovated. Additionally, transformers were overhauled at 8 major substations and at 10,157 transformer points. The capacity of substations across several regions—Andijan, Kashkadarya, Navoi, Surkhandarya, Tashkent, Fergana, and the city of Tashkent—was expanded to 1,452 MVA. This includes increases at “Karshi” (223 MVA), “Tomdi” (600 MVA), “Yuksak” (75 MVA), “Sokin” (200 MVA), “Sherobod” (125 MVA), “Chirchik” (125 MVA), and “Saroy” (125 MVA) substations [13].

Following Government Resolution No. PQ-91 dated March 11, 2023, transformer upgrades were carried out: two 25 MVA units at the “Sag’bon” substation were replaced with two 40 MVA units, and the “Yunusobod” and “Kokand” substations each received upgraded 63 MVA transformers. A 2.3 km-long 110 kV cable line was constructed to connect the “Dok-1” and “Dok-2” networks to the “Yunusobod” substation to strengthen electricity supply in the Yunusobod district. Moreover, the new “Olmos” substation was

built in the Yashnobod district, equipped with two 63 MVA transformers and 3 km of 110 kV power lines [14].

In total, 29,556 km of 0.4–110 kV power networks and 10,158 transformer stations operating at 6/10/0.4 kV were overhauled. Under the localization program, 60 projects generated goods valued at 7.494 trillion soums—of which 7.429 trillion were attributed to 20 oil and gas projects, and 65 billion soums to 40 electricity projects. As a result, imports were reduced by \$626 million (\$605 million in oil and gas, and \$21 million in electricity) [15].

The cost of domestic goods production decreased by 2.721 trillion soums, with savings of 341 billion soums in the oil and gas sector and 2.38 trillion soums in the electricity sector. In addition, 696 new jobs were created across the industry—381 in enterprise operations (214 in oil and gas, 167 in electricity), and 315 within the framework of newly launched investment projects, including 120 at the new Syrdarya TPP and 195 at the QTEM project.

5. Conclusion

The analysis of Uzbekistan's oil and gas industry reveals a notable progression in production capacity, infrastructural modernization, and strategic investment allocation, both in traditional fossil fuels and renewable energy sources. In 2023, the sector achieved significant outputs, including 46.7 billion cubic meters of natural gas and 2.83 million tons of liquid hydrocarbons, alongside the refurbishment of over 29,000 km of power networks and substantial cost reductions through localization. These achievements underscore the sector's critical role in national energy security and economic development. The findings imply that continuous investment in innovation, energy efficiency, and infrastructure is essential to sustain momentum, meet growing domestic demand, and align with global energy transitions. Further research is needed to explore the long-term environmental and economic impacts of balancing fossil fuel reliance with renewable energy integration in Uzbekistan, and to develop models for optimizing investment strategies under international climate commitments.

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