

Kazakhstan Energy Outlook 2024



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Ladies and Gentlemen, Dear Readers!

Kassym-Jomart Tokayev, President of the Republic of Kazakhstan, emphasized the need for robust analytical support for the state apparatus at the second session of the National Kurultai «Fair Kazakhstan – Honest Citizen» in June 2023. He stated, «We require a strong network of expert-analytical centers capable of operating effectively and delivering a high-quality and in-demand intellectual product... The effectiveness of public administration largely depends on the quality of analytical support. The state urgently needs comprehensive research and recommendations to address socially significant issues and ensure the country’s holistic progress.»

At the current state of Kazakhstan’s professional expertise system for the oil, gas, and electric energy sectors, government bodies and the quasi-governmental sector relying on scattered, fragmented data. This data, sourced from various industry departments and statistical portals, lacks analytical and predictive capabilities.

Addressing the shortage of high-quality industry analysis, the KAZENERGY Association and the Kazakhstani IT company AppStream have established the Analytical Center “ENERGY” (ENERGY Insights & Analytics). This initiative aligns perfectly with the President’s vision and contributes to the State’s task of conducting comprehensive analytical

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research in oil, gas, and electric energy policies. We believe the analytics and research results will be valuable to government bodies, companies in the industry, as well as foreign and Kazakhstani investors.

The Kazakhstan Energy Outlook 2024, prepared by ENERGY Insights & Analytics, represents the high-quality, in-demand intellectual product that was mentioned by the President. The report is established on proven methodologies established by the KAZENERGY Association in its preparation of National Energy Reports since 2013. It focuses on current issues of the industry and the significant impact of the oil production industry on Kazakhstan's economy. The analytical data was compiled and developed using the own-developed Analytical Platform EXia.

The KAZENERGY Association will continue to produce National Energy Reports in collaboration with S&P Global Commodity Insights every two to three years, covering all sectors of Kazakhstan's energy industry. Meanwhile, the Kazakhstan Energy Outlook will be released annually, concentrating on a specific sector. For instance, the focus of Kazakhstan Energy Outlook 2024 is world and Kazakhstani crude oil production.

We hope that the Kazakhstan Energy Outlook 2024 will be properly appreciated by government bodies for its utility in shaping proposals and developing documents guiding the future of the fuel and energy complex.

Sincerely,
Magzum Mirzagaliyev
Chairman of the KAZENERGY Association



Dear Ladies and Gentlemen!

The KAZENERGY Association continues to fulfill its mandate to advocate and represent the interests of the Association's members from the oil and gas industry, the power sector, and nuclear energy, while also promote the sustainable development of these industries.

On August 14, 2024, under the chairmanship of Kazakhstan's Prime Minister, Olzhas Bektenov, a meeting on the development of the oil and gas sector was held. The meeting included leaders from relevant ministries, government agencies, oil and gas companies, and members of the KAZENERGY Association. During the meeting, a productive exchange of views took place with government officials, focusing on key aspects that impact the future development of the country's oil and gas sector, including prospects for new projects, technological innovations, and measures to improve the environmental situation in oil-producing regions.

At the same meeting, the Association's readiness to become an effective platform for developing coordinated solutions between businesses and government bodies was highlighted with the aim to enhance the industry's investment attractiveness, expand geological exploration, open new oilfields, increase oil production volumes, develop the gas industry,

and create new segments in petrochemicals. To achieve these goals, the Analytical Center «ENERGY» (ENERGY Insights & Analytics) will be involved, serving as a «think tank» for the oil and gas sector.

The document you are reading, Kazakhstan Energy Outlook 2024, is one of the analytical products of our Analytical Center. I hope this report will be helpful to the KAZENERGY Association members and other stakeholders in understanding the trends and prospects of oil production in Kazakhstan.

Sincerely,
Zhandos Nurmaganbetov
*General Director of
the KAZENERGY Association*



Dear Readers!

We are pleased to present the new analytical product — Kazakhstan Energy Outlook 2024, which embodies the key goals and mission of our company, the Analytical Center «ENERGY» (ENERGY Insights & Analytics), which is aimed to provide stakeholders comprehensive, reliable, and timely information on the oil and gas industry.

The Analytical Platform EXia is an integral part of our work and serves as the main tool for creating the Kazakhstan Energy Outlook 2024. This platform allows us to effectively identify, localize, and format data, ensuring the most useful presentation of information for specific use cases. By leveraging advanced technologies, open-source software, and proprietary developments, we have created a product capable of deep analysis of big data, key industry indicators, and scenario forecasting—critical for understanding market dynamics.

We look to the future with optimism and are preparing for new experiments. Our plans include further strengthening ENERGY Insights & Analytics' position as a leading expert-analytical center in Kazakhstan and the Caspian region. We aim to integrate into the national network of

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analytical centers to provide the highest quality research and recommendations to our clients. We hope that products like the Kazakhstan Energy Outlook 2024 will become an essential part of decision-making in the energy sector and have a positive impact on the industry's development amid global changes.

Best regards,
Daniyar Nassipov
Chief Managing Partner
ENERGY Insights & Analytics

Editors of the Kazakhstan Energy Outlook 2024



Alikhan Baidussenov
Senior Partner
ENERGY Insights & Analytics



Denis Korsunov
Partner
ENERGY Insights & Analytics

Dear Colleagues!

The Kazakhstan Energy Outlook 2024 — an analytical report that provides a comprehensive set of data, analysis, and forecasts to help understand current and future trends in the oil and gas industry. A distinctive feature of the Kazakhstan Energy Outlook is the use of the Analytical Platform EXia, developed by ENERGY Insights & Analytics, to conduct thorough monitoring and analysis of key industry indicators, provide independent analysis of key investment projects, and offer recommendations on the long-term development of the energy industry.

The structure of the report allows readers to gain insight into the context in which oil producing companies operate by reviewing what we consider the key events in the industry this year. Following that, in the «Insights & Analytics» section, a series of articles addresses the relevance of crude oil to both the global market and Kazakhstan. In the «Strategist’s Toolkit» section we outline key macroeconomic projections that characterize

the medium-term outlook for the oil industry, such as crude's supply/demand balance and global oil prices. This is followed by our assessment of Kazakhstan's oil production investment potential, which will help track the sector's development trajectory in the coming years.

We would like to highlight the analytical materials prepared by S&P Global Commodity Insights on the prospects for Kazakhstan's KEBCO crude oil and the investment attractiveness of the country's oil and gas sector. The ENERGY Insights & Analytics team is very grateful to our colleagues at S&P Global Commodity Insights for their support of our initiative and our shared goal of making analytics more valuable and accessible to decision-makers.

We are confident that beyond the Kazakhstan Energy Outlook, there will be many more exciting meetings, negotiations, partnerships, and successful collaborations as we work towards achieving the important goal set by the Kazakhstan's President: building the network of expert-analytical centers offering high-quality, in-demand intellectual products.

Part 1. CURRENT CONTEXT OF THE OIL AND GAS INDUSTRY

This section presents global and Kazakhstani industry events that, according to ENERGY Insights & Analytics, shape the current landscape of the oil and gas sector, along with key topics for analysis and forecasting.

OIL AND GAS KEY EVENTS - THE WORLD

Oil exports - change of leader

Over the past 10 years, the United States has nearly doubled its oil production, increasing from 10.1 million barrels per day in 2013 to 19.4 million barrels per day in 2023. While the U.S. has outpaced its closest competitor, Saudi Arabia, in oil production since 2014, by 2023, the U.S. also surpassed Saudi Arabia in oil exports (9.1 million barrels per day for the U.S. compared to 8.3 million for Saudi Arabia). This growth in U.S. production has met the traditionally high domestic demand and supported rising consumption in the Asia-Pacific region. It has also helped offset the production cuts from OPEC member countries and, to some extent, OPEC+.

Source: based on materials from the Statistical Review of World Energy 2024, Energy Institute

The end of the petrodollar era?

Fifty years ago, in 1974, the United States and Saudi Arabia signed a security agreement that expired on June 9, 2024. Many consider this agreement to be the foundation of the petrodollar system. While the agreement doesn't explicitly require Saudi Arabia to sell its oil in dollars, Bloomberg reports that there has been an unspoken arrangement since 1974. Under this arrangement, Saudi Arabia uses dollars earned from oil sales to buy U.S. Treasury bonds, and in return, receives significant military aid and equipment from the U.S. Following Saudi Arabia's lead, other OPEC members also began selling oil in U.S. dollars, giving rise to the «petrodollar» system that continues to dominate over other currencies.

What does this mean for the oil sector?

This dominance is largely due to the U.S. dollar's share of the global market. For years, countries have been de-dollarizing their economies, increasingly conducting cross-border transactions in local currencies instead of U.S. dollars. Saudi Arabia is among those diversifying its trade. The kingdom has openly stated that it is willing to sell oil in Chinese yuan. Other countries, including the United Arab Emirates and Russia, have also moved in this direction, though Russia's shift away from the U.S. dollar is largely driven by sanctions imposed on the country.

Source: based on materials from the Wall Street Journal, Bloomberg.

Investment in renewable energy sources is overtaking fossil fuels

Total investment in the energy sector is expected to exceed three trillion US dollars in 2024, with two trillion of that amount directed toward renewable energy sources. Since 2016, investment in renewable energy has consistently outpaced investment in fossil fuels (oil, gas, coal), and over the past three years, these investments have been double that of fossil fuels. The largest share of these investments comes from the three biggest market players: China, the United States, and the European Union. The United States will invest 320 billion US dollars in 2024, a 50% increase from 2019. Overall, this trend is being followed by other developed countries, although they still lag behind China, where the increase compared to 2019 was 75%.

The steady growth in renewable energy investment reflects a broader shift in the energy industry toward environmentally friendly technologies, driven by international efforts to reduce carbon emissions and combat climate change. Renewable energy is becoming a key priority for both governments and businesses, contributing to the decarbonization of the global economy and reducing reliance on fossil fuels.

Source: based on materials from the World Energy Investment 2024, IEA

The waning interest of oil and gas majors in renewable energy

Oil majors ExxonMobil, Shell, and BP exceeded analysts' expectations for second-quarter 2024 earnings, with the majority of profits coming from oil and gas production. The companies' executives reaffirmed their commitment to investing in new exploration projects and increasing production.

These moves by oil and gas companies signal to the market that global oil demand remains resilient in the medium term. Investors continue to back oil and gas projects due to the high returns, as long as companies emphasize the importance of reducing greenhouse gas emissions.

ExxonMobil reported a 15% increase in upstream oil and gas production in the second quarter compared to the first quarter of 2024, driven largely by record output in the Permian Basin and Guyana.

Shell, despite its public commitment to a green agenda, has sold its stakes in several renewable energy projects. This may reflect the financial unattractiveness of these ventures, with Shell posting renewable energy losses of \$187 million in the second quarter and \$24 million for the first half of 2024.

BP has abandoned its goal of cutting oil and gas production by 2030. CEO Murray Auchincloss is scaling back the company's energy transition strategy in an effort to restore investor confidence, according to Reuters. BP's original strategy, announced in 2020, was the most ambitious in the sector, aiming for a 40% production cut by 2030 while rapidly expanding renewables. However, in February 2023, BP revised this target to a 25% reduction, which would allow for production of 2 million barrels per day by the end of the decade, as investors increasingly focus on short-term profits over the energy transition.

Source: based on materials from ExxonMobil, Shell, BP, Reuters

Redirection of Export Flows

Sanctions and shifts in international relations have led to significant redirection of oil and gas export flows. Facing restrictions in the European market, Russia has increased supplies to Asia-Pacific countries, including China and India, which have become key importers of Russian oil.

At the same time, European countries have reduced their dependence on Russian energy, shifting to sources from the U.S., Norway, and Middle Eastern countries. These changes have been accompanied by a restructuring of logistics routes and the development of regional markets with varying pricing policies.

Source: based on materials S&P Global, Wall Street Journal.

In our view, these global trends are shaping a new world order where countries and companies are increasingly focused on developing autonomous supply chains and local resources. However, this shift comes at the cost of losing key advantages of globalization, including economies of scale, access to advanced technologies, and international cooperation, which in turn raises costs and slows innovation in the oil and gas industry.

OIL AND GAS KEY EVENTS – KAZAKHSTAN

Expansion of KEBCO Use

On November 12, 2024, Kazakhstan Export Blend Crude Oil (KEBCO) was traded for the first time in the Platts Market on Close (MOC) pricing process. Eni sold 80,000 tonnes of KEBCO to Petraco at a discount of \$1.75 per barrel to Dated Brent.

The inclusion of KEBCO in the Platts trading session marks a significant step forward, increasing the transparency of KEBCO pricing. It positions KEBCO as a viable alternative to Russian Urals crude and helps address supply shortages in the European market.

Source: based on materials S&P Global, Reuters.

State claims against oil companies

In April 2023, Kazakhstan, represented by PSA LLP, the authorized body for production sharing agreements in the Kashagan, Karachaganak, and Dunga projects, filed a \$13 billion arbitration claim against the Kashagan operator, NCOC. The claim alleged violations of tender procedures and incomplete fulfillment of contractual obligations. Kazakhstan has since increased the claim amount to \$150 billion.

«The additional claim concerns lost profits of \$138 billion, reflecting the difference between the promised oil production costs to the government and what the field developers actually achieved,» reported Bloomberg.

NCOC has confirmed the existence of several disputes regarding production sharing that will be addressed through arbitration.

Shyngys Ilyasov, Advisor to the Minister of Energy of the Republic of Kazakhstan, stated: «According to the provisions of the PSA for the North Caspian project, details of arbitration disputes and claims are not subject to disclosure. This is a purely commercial dispute, which the parties intend to resolve through arbitration.»

In addition, Kazakhstan has imposed environmental requirements that must be met. Approximately ten violations of environmental legislation were identified at Kashagan, including improper sulfur storage. As a result, the Kazakh government ordered the company to pay a fine of over \$5 billion.

In August 2024, another oil company, Caspiy Neft JSC, was fined over 13 billion tenge for failing to set an accumulation limit for more than 4,500 tons of hazardous waste.

«Imagine you drive to work every day at a permitted speed of 60 km/h. Then one day, a police officer stops you and says: ‘Last week, you drove a total of 420 km/h; here is your fine.’ This is roughly the situation we encountered,» said the head of the company’s legal analysis department.

Caspiy Neft JSC paid the fine after the court ruling came into force, but the company is now disputing the decision in the Supreme Court of the Republic of Kazakhstan.

Source: based on materials from the Kursiv Media, Forbes.kz, Bloomberg

Construction of Kazakhstan's polyethylene plant begins

On September 11, 2024, construction began on a polyethylene production plant in the Atyrau region, with a capacity of 1.25 million tons per year and an investment of approximately 7.4 billion US dollars. Completion of construction is scheduled for 2029.

The project is being carried out under President Kassym-Jomart Tokayev's directive to develop a petrochemical industry cluster in the western region of Kazakhstan. It will be the largest project in the country's manufacturing sector.

According to forecasts, the project will boost GDP growth by 1.2% and contribute to the development of the petrochemical industry and the diversification of the economy. The new plant is expected to create about 8,000 jobs during construction and 800 jobs once production begins.

Source: [press release of KazMunayGas](#)

GPP from Qatar

In February 2024, E. Zharkeshov, Chairman of the Board of QazaqGaz, and M. Al-Hayat, head of Qatar's UCC Holding, signed several cooperation agreements aimed at advancing projects to promote the development of Kazakhstan's gas industry.

Among these agreements, two focus on the construction of gas processing plants at the Kashagan field, with annual capacities of 1 and 2.5 billion cubic meters, respectively.

Other agreements address attracting investments for the construction of the KS-14 compressor station and main gas pipeline, as well as the second line of the Beineu-Bozoi-Shymkent main gas pipeline, which will have an annual capacity of 15 billion cubic meters.

Source: [press release of QazaqGaz](#)

Hydrogen project «Hyrasia One»

Hyrasia One, Svevind Energy's Kazakhstani renewable hydrogen and ammonia megaproject, completed its Pre-FEED phase in May 2024. Extensive environmental and social impact assessments are ongoing, with detailed engineering (the FEED phase) scheduled to begin in mid-2025. Located in the Mangystau region, the project is expected to produce 2 million tons of renewable hydrogen per year, or 11 million tons of green ammonia at full capacity, for markets in Europe, Asia, and the Persian Gulf. Construction is slated to start in 2027, with full capacity anticipated by 2032. Millions of solar panels and thousands of wind turbines will be installed across the vast steppes of southwestern Kazakhstan, where green electricity will be used to produce hydrogen through the electrolysis of water. The hydrogen will then be converted into ammonia at specialized plants.

The Hyrasia One project seeks to leverage Kazakhstan's virtually unlimited wind and solar energy resources, alongside the strong political support of the governments of Kazakhstan, Germany, and Europe for the «green agenda.»

Source: [based on materials from the hyrasia.one](#)

Kazakhstan systematically exceeds OPEC+ quotas

Kazakhstan, like several other oil-producing countries, is a member of the OPEC+ group, which emerged in 2016 in response to dissatisfaction among many oil-producing countries with global oil prices. The primary goal of both OPEC and OPEC+ is to coordinate the oil industry, particularly by maintaining stable oil prices. This is achieved through the implementation of oil production quotas. While OPEC countries are obligated to adhere to these quotas, for OPEC+ members, they serve more as recommendations. Decisions regarding these quotas are made annually, based on current oil prices and the views of all member countries.

In 2024, Kazakhstan has exceeded its allocated quotas, producing more oil than OPEC+ recommended. With a quota of 1.468 million barrels per day for January–September 2024, Kazakhstan only met its quota in two of the nine months. In response, the Ministry of Energy of the Republic of Kazakhstan has stated that the country will make every effort to meet its obligations and compensate for the overproduction, in line with the compensation plan submitted to the OPEC Secretariat.

Source: based on materials from the Ministry of Energy of the Republic of Kazakhstan, Wall Street Journal, S&P Global, ENERGY Insights & Analytics

The Analytical Platform EXia has the «News Analytics» module, which automatically collects, analyzes, and categorizes news and articles from various sources (news aggregators and feeds, subscriptions, Telegram channels, social media posts) using machine learning algorithms. The module allows users to collect materials published online by keywords, conduct initial analysis, including determining the tone of messages (negative/positive/neutral), create a word cloud, and highlight trends through the frequency of mentions. The analysis allows users to monitor news materials and comments across the industry, as well as promptly respond to negative materials and support positive ones.

Part 2. INSIGHTS & ANALYTICS

The «Insights & Analytics» section highlights the key issues in Kazakhstan’s oil and gas industry, as comprehended by ENERGY Insights & Analytics. Given the ongoing (robust) global demand for oil, it is crucial for Kazakhstan to understand and support its oil production across all areas, including forecasting domestic demand and supply, assessing the impact of associated gas on oil production, managing taxes and relationships with megaprojects, and evaluating sales routes and oil prices. ENERGY Insights & Analytics plans to regularly revisit these issues (along with new ones) to update the data and validate forecasts.

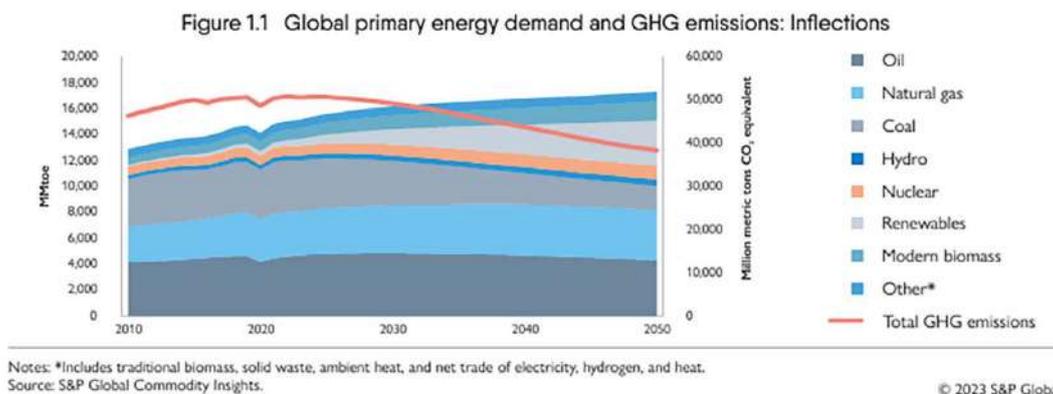
CRUDE OIL - UPWARD TREND

Despite the global shift towards cleaner energy, oil demand is expected to rise in line with population growth, and Kazakhstan, as a key player, must invest in R&D, technology, and incentives to remain competitive in attracting necessary industry investments.

The article was first published on www.exia.kz on August 16, 2024

Introduction

Oil production and its forecasting have consistently been one of the major topics globally because of oil’s dominant position in the global energy. According to the below chart from the [National Energy Report 2023](#) by KAZENERGY, oil is still the primary source of energy. The below chart suggests that there is a steady growth in renewable energy, but the gap between traditional energy sources and the cleaner ones is still substantial.



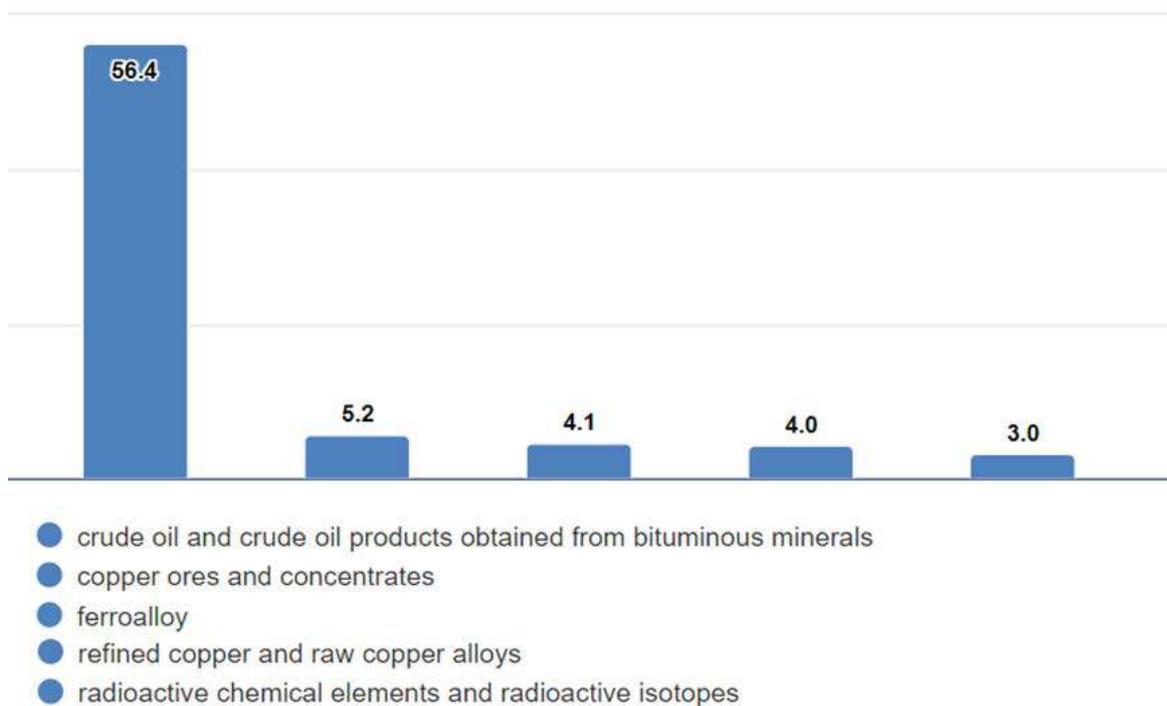
Source: National Energy Report 2023

Part 2. Insights & Analytics

Being the primary source of energy means that it is difficult to overestimate the importance of oil production forecasts. The oil supply-demand equilibrium is crucial for the global economy as it directly affects energy prices, which is a vital component of any product or service. It is important not to forget that the supply-demand balance is not only influenced by purely economic factors, but also by geopolitical and environmental factors. In this report, we would like to review forecasts for oil production from reputable sources and share insights on which factors can disrupt these forecasts.

The report is especially interesting for our country as oil export is one of the key drivers of Kazakhstan's economy. According to [Kazakhstan's Bureau of National Statistics](#), oil is by far the largest contributor to our country's total export. In January–May 2024 crude oil and crude oil products obtained from bituminous minerals contributed 56.4% to Kazakhstan's total export. That said, understanding key trends and risks for the global supply-demand equilibrium is one of the key strategic issues for our country.

Export from Kazakhstan 32463.7 million US dollars

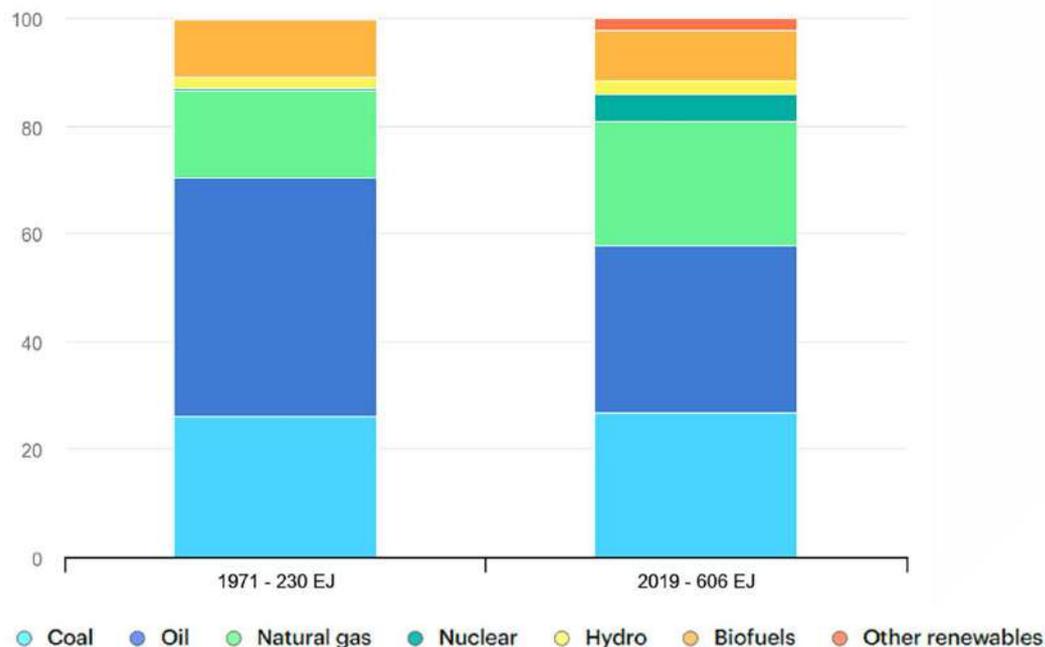


Source: [Kazakhstan's Bureau of National Statistics](#)

Global trends and forecasts

Despite oil remaining the largest source of energy in the global balance in absolute terms, there are indications suggesting that oil’s dominance in global energy is poised to deteriorate. According to the [International Energy Agency](#), between 1971 and 2019 world total energy supply [TES] increased 2.6 times [from 230 EJ to 606 EJ] and its structure changed markedly. Oil’s share fell from 44% to 31% of TES between 1971 and 2010. This trend is explained by concerns about the adverse environmental impact of fossil fuels. As a result, developed countries [China is the only emerging economy that is a prominent clean energy investor] started betting big on developing sources of cleaner energy. Global spending on clean energy technologies and infrastructure are [expected to hit \\$2 trillion in 2024](#), which is twice the amount going to fossil fuels.

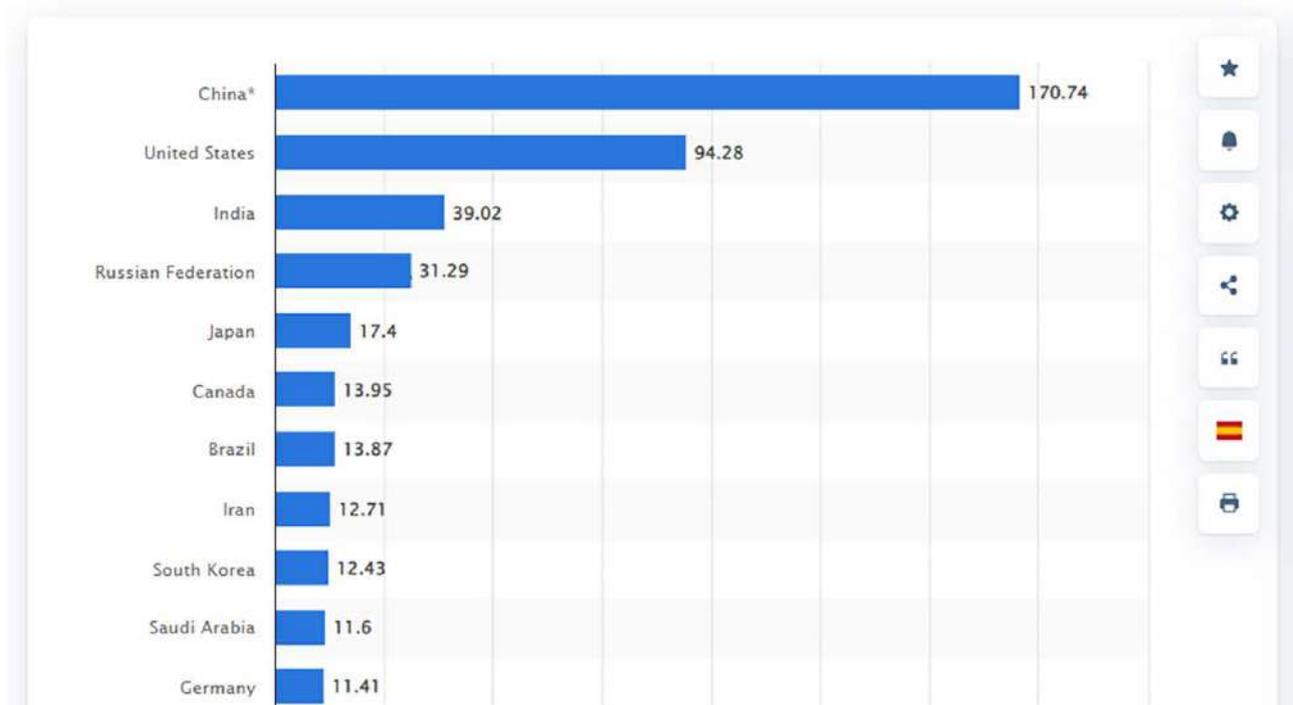
Total primary energy supply by fuel, 1971 and 2019



Source: iea.org

The United States and China are the world’s two largest economies and two leading energy consumers. The cumulative consumption of these two superpowers totaled 265 exajoules in 2023, which represents almost 43% of the total global consumption. Both countries recognize energy mix diversification as crucial strategic priorities. The U.S. Inflation Reduction Act signed by President Joseph Biden on August 16, 2022, created various tax incentives for clean energy and also included clean energy financing program. Renewable energy capacity in China [has grown exponentially since 2011](#), and this leap was also supported by various governmental incentives. The fact that the world’s two by far largest energy consumers are shifting towards cleaner energy sources is a secular headwind for maintaining oil’s dominance in the global energy balance. Therefore, it is highly likely that oil’s share in the global energy mix is poised to continue its secular decline over the next decade.

Primary energy consumption worldwide in 2023, by country (in exajoules)



Source: [statista.com](https://www.statista.com)

On the other hand, losing a relative portion of the world's energy balance does not mean that oil consumption will not grow in absolute terms. Despite efforts of the developed world and China to diversify the world's energy mix, the global oil production expanded from around 73 million barrels per day in 1998 to 96.4 million by 2023, observing a 1.12% compound annual growth rate [CAGR]. Over the same period the global GDP grew from around \$31.8 trillion to \$100.9 trillion, which equates to a 4.73% CAGR.

Given that over the last quarter century the global oil output has significantly lagged behind the global GDP growth and accelerating investments in cleaner energy, it is extremely unlikely that oil production will be close to the real GDP growth in the long-term. Therefore, using a global GDP projection for the next few decades might not be an appropriate base for projecting global oil production.

There are two primary drivers of the GDP growth which are population growth and productivity growth. The global population grew from approximately 6 billion to 8 billion between 1998 and 2023, which represents a 1.16% CAGR. It looks like there is a strong correlation between the world population growth and global oil production, which is sound. According to the United Nations, the world population is projected to reach 9.8 billion in 2050. With this information, we can figure out that the projected population CAGR for the next quarter-century is approximately 0.75%. Therefore, it is sound to expect that crude oil output will compound at approximately the same pace. This is a simplistic approach, because there are numerous variables and constraints that affect the global energy balance. On the other hand, the past few decades have shown that all these headwinds and tailwinds offset each other leaving a strong correlation between oil production and population growth.

We also think that the global population growth will highly likely drive oil demand further because the pace of penetration of clean energy across the world will be uneven. As we mentioned above, mostly only developed countries are aggressively investing in clean energy sources. Apart from China, developing countries are betting less on clean energy. According to the [World Economic Forum](#), developed economies account for 93% of total government spending in clean energy. Furthermore, population growth in developing countries is [notably faster](#) compared to developed ones.

Additional catalysts for the oil production dynamics

Apart from the most obvious driver, population growth, there are also factors that will also likely be a tailwind for oil production. The emergence of generative artificial intelligence [AI] capabilities in the last few years has initiated a true technological war between the largest U.S. giant corporations like Amazon, Microsoft, Google, Tesla, and Meta. These corporations plan to pour hundreds of billions of dollars over the next decade to build data centers across the world to expand their computing capacity to train large language models. According to [Bloomberg](#), Amazon plans to invest up to \$150 billion in the coming 15 years in data centers. Amazon's rivals in the AI battle are not willing to lag behind, so several other corporations also have aggressive plans to expand their data center infrastructure over the next couple of decades. According to [Goldman Sachs](#), AI is poised to drive 160% increase in data center power demand. That said, the trend is secular and the AI revolution in data centers is an apparent solid tailwind that will boost energy demand as well as oil demand.

Moreover, it is vital to understand that clean energy adoption is not an overnight process. As we have seen in one of the first charts, the share of renewable energy in the global energy balance is expanding slowly. The history of traditional energy like oil and gas traces back more than a century ago, which means that industry is mature, and the global supply-chain is highly efficient. On the other hand, clean energy is much younger and faces substantial headwinds like sourcing of materials and supply chain inefficiencies. For some niches of clean energy industry, like the Electric Vehicles [EVs] there is still a substantial level of uncertainty regarding the longevity of batteries and their replacement costs for consumers. For example, analysts from Bank of America [recently shared](#) their downward revision for the U.S. EV penetration rates by 2030.

Geopolitical factors are also crucial when we speak about oil production levels. Developments of the last few years with escalating geopolitical tensions including oil-rich countries like Russia, Iran, and Venezuela are also significantly affecting oil prices and the output level as well. Sanctions and conflicts have constrained these nations' output, creating supply uncertainties that drive price volatility and shift global trade patterns. As these tensions persist, they continue to influence oil markets, underscoring the deep connection between geopolitics and energy production.

Last but not least, there is an important theoretical aspect called «The Peak Oil Theory». The peak oil theory suggests that global oil production will eventually reach a maximum rate, after which production will decline. As this concept gains traction, concerns about future oil scarcity can drive continued demand. Even as alternative energy sources grow, the idea of approaching or surpassing peak oil could prompt countries and companies to secure oil supplies while they are still available. This perceived scarcity can maintain or even increase the demand for oil in the short to medium term, as industries and governments stockpile reserves and invest in extraction technologies to extend the life of existing oil fields.

Oil demand forecasts from reputable sources

The global oil demand from [OPEC's report](#) confirms the assertion that strong secular oil demand in developing countries will offset the clean energy effect generated by developed countries, classified as OECD in the below table. Overall, OPEC expects the global oil demand to grow from 90.7 million barrels per day [mb/d] in 2020 to 109.1 mb/d by 2045, observing a 0.74% CAGR. This closely aligns with the projected population CAGR over the next decades which was mentioned above.

Long-term oil demand by region

mb/d

	2019	2020	2025	2030	2035	2040	2045	Growth 2019-2045
OECD Americas	25.6	23.3	25.7	24.8	23.1	21.2	19.3	-6.3
OECD Europe	14.3	12.6	13.7	12.9	12.0	11.1	10.2	-4.1
OECD Asia Oceania	7.9	7.1	7.4	6.9	6.4	5.8	5.2	-2.7
OECD	47.9	43.0	46.8	44.6	41.5	38.0	34.8	-13.1
Latin America	6.2	5.8	6.6	7.1	7.4	7.6	7.9	1.6
Middle East & Africa	4.3	3.9	4.8	5.5	6.2	6.9	7.6	3.3
India	4.8	4.3	5.8	7.2	8.6	9.9	11.1	6.3
China	13.1	12.1	14.4	15.5	16.2	16.7	17.1	4.0
Other Asia	9.0	8.5	9.9	10.9	11.7	12.4	13.0	3.9
OPEC	8.7	8.2	9.5	10.5	11.3	11.7	11.7	3.0
Russia	3.6	3.2	3.7	3.8	3.8	3.8	3.7	0.1
Other Eurasia	2.0	1.8	2.1	2.2	2.3	2.3	2.3	0.2
Non-OECD	51.8	47.8	56.9	62.6	67.4	71.2	74.3	22.5
World	99.7	90.7	103.7	107.2	108.9	109.3	109.1	9.4

Source: OPEC

Another reputable source, S&P Global is slightly more conservative than OPEC, but it also projects a steady growth in the global oil demand. The source forecasts the global demand to peak at 109.6 mb/d by 2030 and continue remaining firmly above 100 mb/d up to 2050. This projection was shared in the [National Energy Report 2023](#) from KAZENERGY¹.

¹ S&P Global's outlook for global oil demand is updated annually within the wider framework of the company's Global Energy and Climate Scenarios, and the latest (2024) base case is for maximum world oil consumption to fall below 100 mb/d during 2045-50 (declining to 95 mb/d in 2050). S&P Global also now expects that world oil demand will reach an undulating plateau starting around 2030, while an actual peak, once clearly identified after the fact, could be anytime from the late 2020s to well into the 2030s.

Kazakhstan's oil industry

As we mentioned in the introductory part of the article, crude oil production and its further export is the cornerstone of our country's economy. Our country produced nearly [90 million tons](#) of oil in 2023. Out of this volume, 70.5 million tons of oil were exported, while the rest were supplied to the domestic market.

Tengizchevroil [TCO] dominates the industry in Kazakhstan with its total 2023 production comprising 32% of the country's total oil output. Apart from TCO, there are two other prominent players operating under production sharing agreements [PSAs] like North Caspian Operating Company [NCOC] and Karachaganak Petroleum Operating [KPO]. The cumulative share of these three giants in the country's total output is 66%. The state-owned KazMunaiGas [KMG] JSC company is a vital player not only holding stakes in the above-mentioned PSAs, but also holding 100% stake in one of the largest producers like OzenMunayGas [OMG] and Embamunaigas [EMG]. KMG also holds large stakes in several other companies from the top-10 producers like Mangistaumunaigas [MMG], Karazhanbasmunai [KBM], and Kazgermunai.

Upstream			Midstream			Downstream		
Producer	KMG stake, %	2022 production, MMt (KMG share)	Asset	KMG stake, %	2022 transportation, MMt (KMG share)	Refinery	KMG stake, %	2022 throughput, MMt (KMG share)
Operating assets			Pipeline			Major plants		
OzenMunayGaz	100	5.1	KTO	90	40.7	Atyrau	100	5.2
Embamunaigas	100	2.6	KCP	50	9.6	Pavlodar	100	5.5
Mangistaumunaigas	50	3.0	MunayTas	51	2.9	PKOP	50	3.1
Kazgermunai	50	0.7	CPC	21	12.2	Mini-refineries		
Karazhanbasmunai	50	1.1	Marine fleet			Caspi Bitum	50	0.5
PetroKazakhstan	33	0.6	Kazmorttransflot	100				
Kazakhoil Aktobe	50	0.3	Caspian Sea		0.6			
Kazakhturkmunay	100	0.4						
Unikhtau Operating	100	0.04						
Mega projects								
Tengizchevroil	20	5.8						
KMG Kashagan	17	1.4						
KMG Karachaganak	10	1.0						

Source: National Energy Report 2023

From the below table we can see that oil production is expected to decline by 2035 with around -0.8% CAGR, which is a warning sign. TCO is the only player out of the top-10 who is likely to deliver growth in production levels. This looks unsurprising as the company invests heavily in growth by implementing the Future Growth Project / Wellhead Pressure Management Project [FGP/WPMP] worth \$46.7 billion. The project will increase TCO's production by 12 million tons per year.

Part 2. Insights & Analytics

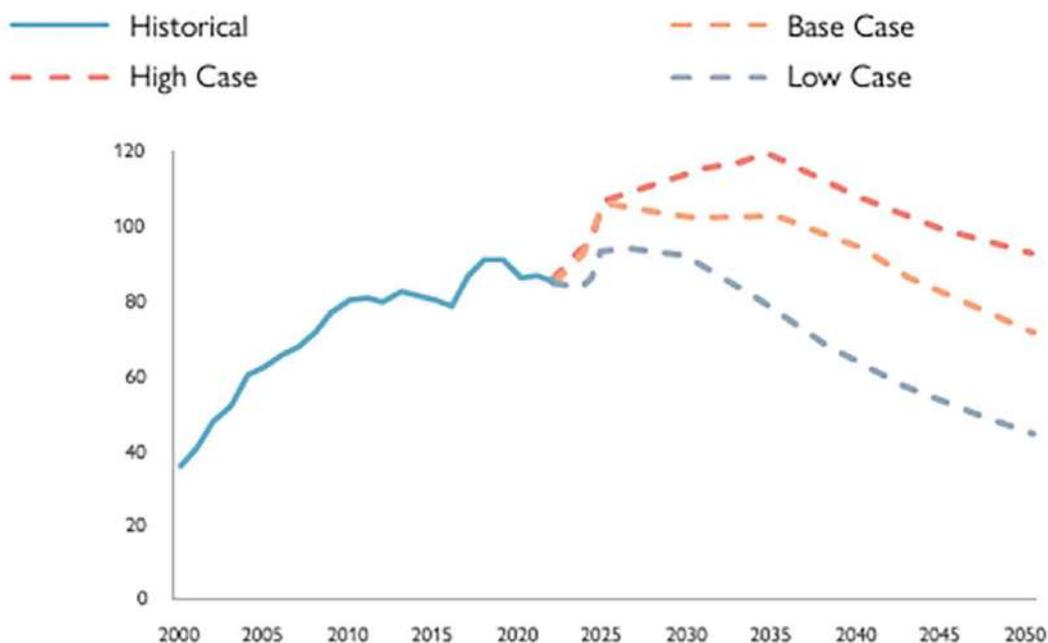
Company name	Projection		CAGR
	2024, mln tons	2035, mln tons	
TCO	29,0	36,3	2,1%
NCOC*	19,4	16,5	-1,5%
KPO	10,9	9,3	-1,4%
MMG	6,2	4,1	-3,7%
OMG	5,3	4,8	-0,9%
CNPC-Aktobemunaigas	2,9	1,5	-5,5%
EMG	2,8	2,0	-2,8%
KBM	2,2	1,2	-5,4%
Kazgermunai	1,0	0,0	-100%
Kaspiy Neft	0,8	0,3	-9,7%
Other companies	9,2	5,7	-4,2%
Total	89,6	81,7	-0,8%

**Oil production from 1 bcma and Phase 2A projects only*

Source: Compiled based on data from Analytical Platform EXia

Another warning sign is the forecast from S&P Global Commodity Insights shared in the National Energy Report 2023 forecasting a sharp decline in Kazakhstan's oil production after 2035 in the base- and low-case scenarios and a significant fall even in the high case. As we saw from the earlier paragraphs of the analysis, the global demand for oil is highly likely to demonstrate growth over the next few decades. In case Kazakhstan's oil production goes in the opposite direction it will mean that our country is losing its competitive edge in the global energy industry, which is a warning trend.

Figure 5.3 Outlook for Kazakhstan's oil production by case (MMt)



Source: National Energy Report 2023

Several years of low oil prices between 2014 and 2021 was a global problem for oil exporting countries which has led to decreased investments in exploration of new fields. However, since oil prices are demonstrating positive dynamics due to geopolitical developments and the global economy recovering after the COVID-19 pandemic, we believe that elevated oil prices position oil-rich states like Kazakhstan well to accumulate resources to invest in exploration and development.

Apart from efficiently absorbing the current favorable oil prices, the industry will also highly likely thrive if proper incentives are introduced. Supportive policies from the government will inevitably improve Kazakhstan's attractiveness for oil and gas investments. This could include tax incentives, reducing the difference in netback of crude oil sales on exports and the domestic market, streamlined regulatory processes, and stable legal frameworks that provide certainty for long-term investments. Among factors that depend on the government, predictability and stability in the country's tax regulation are vital for investors. When tax policies are predictable and consistent over the long term, investors are likely to have greater confidence that the risk of unforeseen costs or regulatory changes is low.

Investing in technology to maximize efficiency of exploration and production is a cornerstone to maximize returns from invested capital [ROIC]. Without demonstrating strong record of ensuring maximum returns on invested capital it will be difficult to raise capital on favorable terms. Capital is a scarce resource and all businesses in the world are competing for this resource. We live in a world where companies like Google generate a staggering 35% ROIC, which means that oil companies must be extremely lean and efficient to be able to compete for the capital.

Therefore, a disciplined approach to allocating resources is vital. Moreover, to ensure that the most efficient technologies are in place, our key oil industry's players should have technological partnerships and joint projects with the most technologically advanced companies of the world.

The Bottom Line

Despite the strong secular shift of the world shifting to cleaner energy sources decreasing oil's share in the global energy balance, global oil demand is expected to continue increasing in absolute terms. The growth is expected to be approximately in line with the global population's expansion.

Kazakhstan is one of the prominent players in the global oil industry, and it has solid position to capitalize on this favorable trend. However, supporting growth in production capacity needs substantial investments in the industry. In a highly competitive world of scarce financial resources, returns on investment in oil industry should be competitive which is impossible without investments in R&D, technological partnerships with the most advanced companies, and proper incentives to attract more investments in the industry.

NATURAL GAS – KAZAKHSTAN’S GREAT EXPECTATIONS

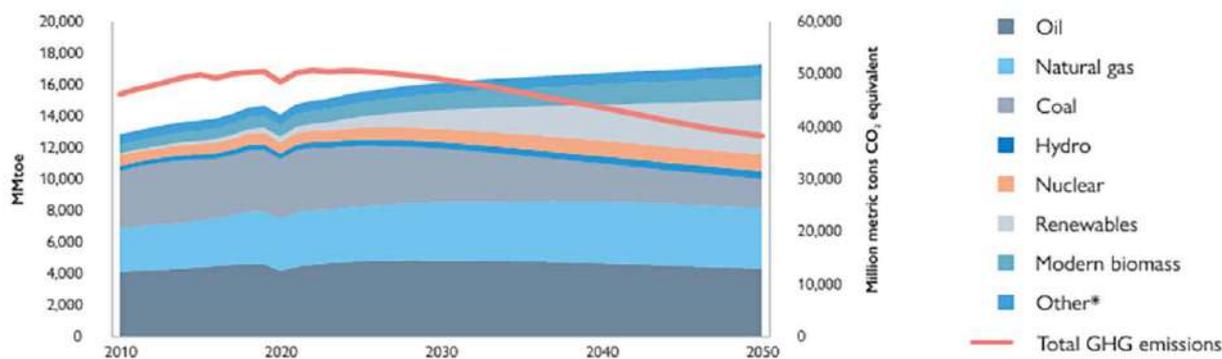
Kazakhstan has strong potential in the global natural gas industry but faces challenges in finding the economic solution for new investments. Collaborative efforts to expand capacity and address the energy trilemma will be key to securing Kazakhstan’s bright energy future.

The article was first published on www.exia.kz on August 29, 2024

Introduction

The global energy landscape is rapidly evolving as countries prioritize energy security, ecology sustainability, and economic growth. Natural gas, often described as a «bridge fuel,» plays a crucial role in the energy transition by offering a cleaner alternative to coal and oil. According to the below chart from the [National Energy Report 2023 by KAZENERGY](#), the share of natural gas in the global energy mix is expected to lead by 2050.

Figure 1.1 Global primary energy demand and GHG emissions: Inflections



Notes: *Includes traditional biomass, solid waste, ambient heat, and net trade of electricity, hydrogen, and heat.
Source: S&P Global Commodity Insights.

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Source: [National Energy Report 2023](#)

Natural gas accounts for a significant share of the global energy balance, and its role is expected to grow amid efforts to achieve net-zero targets. With the increasing importance of natural gas in the global energy mix, Kazakhstan, a country [endowed with substantial reserves](#), is presented with both opportunities and challenges. The balance of natural gas in Kazakhstan directly impacts not only the domestic economy but also the country’s role in the broader regional energy dynamics. In Kazakhstan, the development of new gas processing plants [GPZs] is central to unlocking the potential of existing gas reserves. Additionally, increasing gas production will allow Kazakhstan to extract more oil, as gas is also injected into reservoirs to intensify oil recovery. However, it’s important for readers to understand that a competitive return on invested capital [ROIC] is a critical factor for investors when deciding to allocate their capital to Kazakhstan’s natural gas industry. While ensuring a supportive environment for investors is essential, it should not come at the expense of the country’s broader interests. Balancing these priorities is crucial to fully realizing the potential of the country’s natural gas sector.

Global trends and opportunities for natural gas

The United States is by far the world’s largest producer of natural gas with the output around [41.3 trillion cubic feet](#) [cf] in 2023 [approximately 1.17 trillion cubic meters [cm], using the conversion factor of 1 cubic meter = 35.315 cubic feet]. Russia confidently holds the second spot among the largest natural gas producers, but the gap with the U.S. [is wide](#). Among the top-5 natural gas producers are countries like Iran, China, and Canada. Since the U.S. and Canada have closely integrated natural gas infrastructure, we will use North America as a benchmark and the global flagman of the natural gas industry.

According to [the source](#), North America had 1,782 active gas processing plants with a total gas processing capacity of 227.8 billion cf per day [bcfd] as of January 2022. The U.S. and Canada combined natural gas production averaged around 137 bcf in 2022. As we see, North American gas processing plants are very far from utilizing full capacity and the largest midstream companies nevertheless continue investing in natural gas infrastructure. If we refer to the [latest earnings presentation of Enbridge](#), the largest midstream company in North America, we can see that the lion’s portion of the company’s Capex budget is allocated to expanding its gas infrastructure. Other North American midstream giants like Energy Transfer LP are also betting big on expanding their natural gas infrastructure.

	Project	Expected ISD	Capital (\$B)
Liquids Pipelines	Gray Oak & Ingleside Expansion	2025-2026	0.1 USD
	Enbridge Houston Oil Terminal	2025	0.2 USD
Gas Transmission	Modernization Program	2024-2027	2.9 USD
	Venice Extension	2024	0.5 USD
	Appalachia to Market Phase II	2025	0.1 USD
	Longview RNG	2025	0.1 USD
	Tennessee Ridgeline	2026	1.1 USD
	T-North Expansion (Aspen Point)	2026	1.2 CAD
	Woodfibre LNG	2027	1.5 USD
	Sparta	2028	0.2 USD
	T-South Expansion (Sunrise)	2028	4.0 CAD
	Gas Distribution & Storage	CAD Utility Growth Capital ¹	2024-2026
Transmission/Storage Assets ¹		2024-2026	0.7 CAD
New Connections/Expansions ¹		2024-2026	0.9 CAD
U.S. Utility Growth Capital ²		2025-2027	3.7 USD
Renewables	Fox Squirrel Solar - Phase 2	2024	0.3 USD
	Provence Grand Large	2024	0.1 CAD
	Calvados Offshore ³	2025	0.9 CAD
	Orange Grove Solar	2025	0.3 USD
Total secured capital program			\$24B⁴
Capital spent to date			\$3B⁵

Source: Enbridge

Part 2. Insights & Analytics

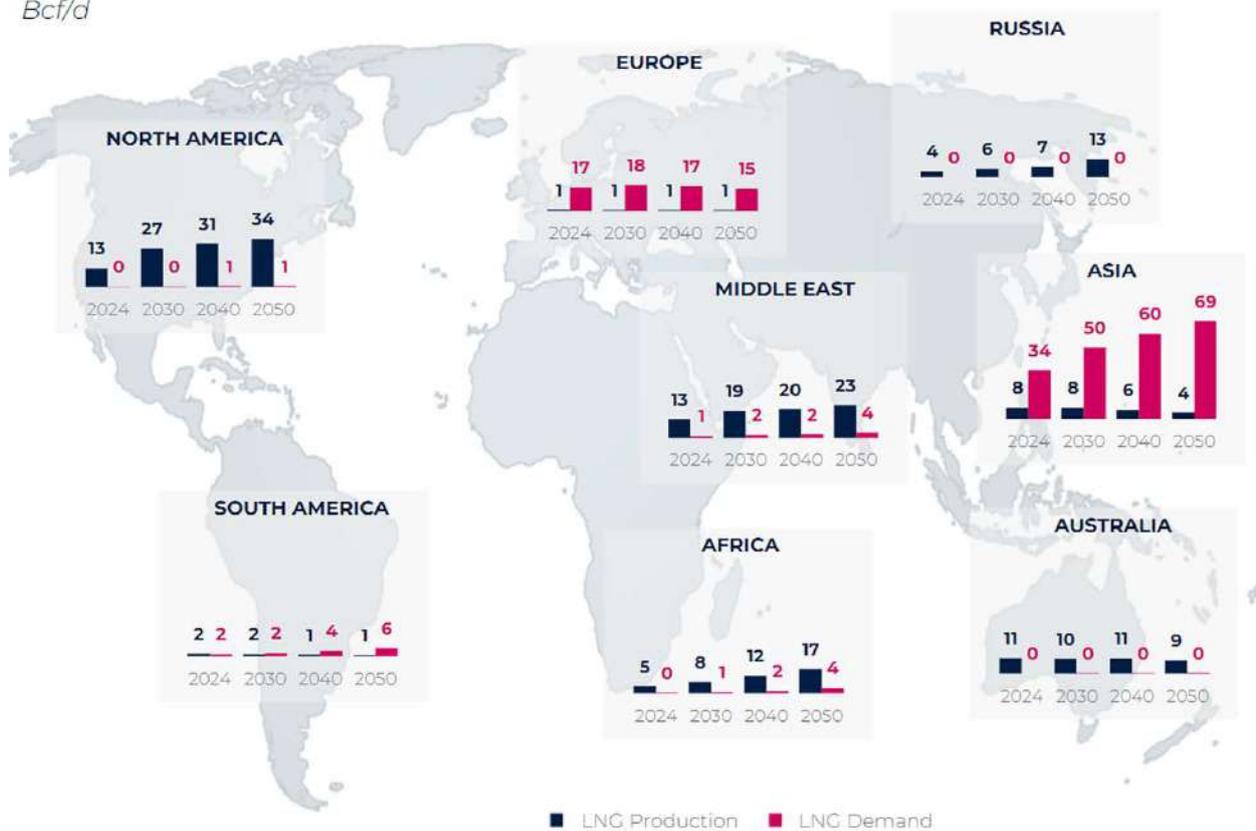
The largest American natural gas producers recognize robust potential of liquified natural gas [LNG]. EQT Corporation is the largest natural gas producer in the U.S. and the company forecasts that the global LNG market will double by the late 2030s. The good information for our country is that Asia will be the major LNG demand growth driver. The U.S. natural gas corporations see a massive opportunity to build value for their shareholders via LNG export potential and they boost Capex to maximize their LNG potential. According to [Yahoo Finance](#), the U.S. LNG export capacity is expected to rise 80% by 2028.

While Kazakhstan, as a landlocked country, is not directly exposed to these secular LNG tailwinds, it stands to benefit from the overall increase in natural gas demand in Asia. The country's proximity to Asia's largest economies provides a significant advantage in the context of rising energy needs. Despite the current lack of direct natural gas export infrastructure, Kazakhstan's shorter supply routes could offer a distinct cost advantage and make potential capital projects more economically attractive.

That said, there is considerable potential for Kazakhstan to enhance its natural gas export capabilities if a pipeline to India is constructed in the future. This project would involve crossing multiple countries, such as Turkmenistan, Uzbekistan, Afghanistan, and Pakistan, making it a complex undertaking with significant geopolitical considerations. However, given the recent geopolitical shifts and challenges surrounding Russia, such a pipeline project becomes increasingly feasible. The potential for this infrastructure could further bolster Kazakhstan's role in meeting Asia's growing energy demands.

GLOBAL LNG SUPPLY AND DEMAND ESTIMATES

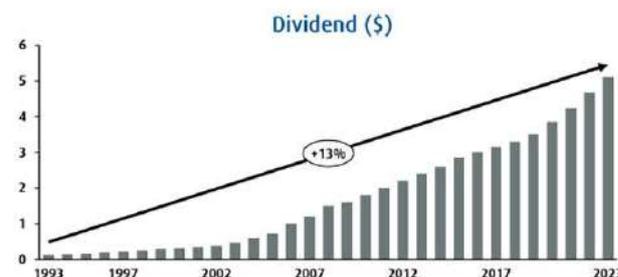
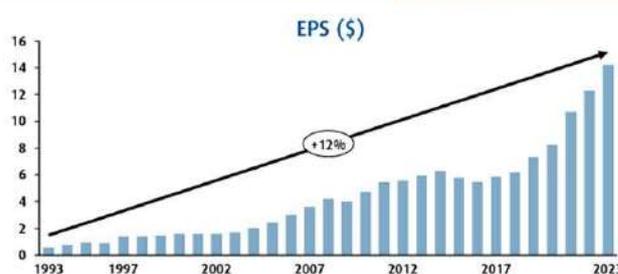
Bcf/d



Source: EQT Corporation

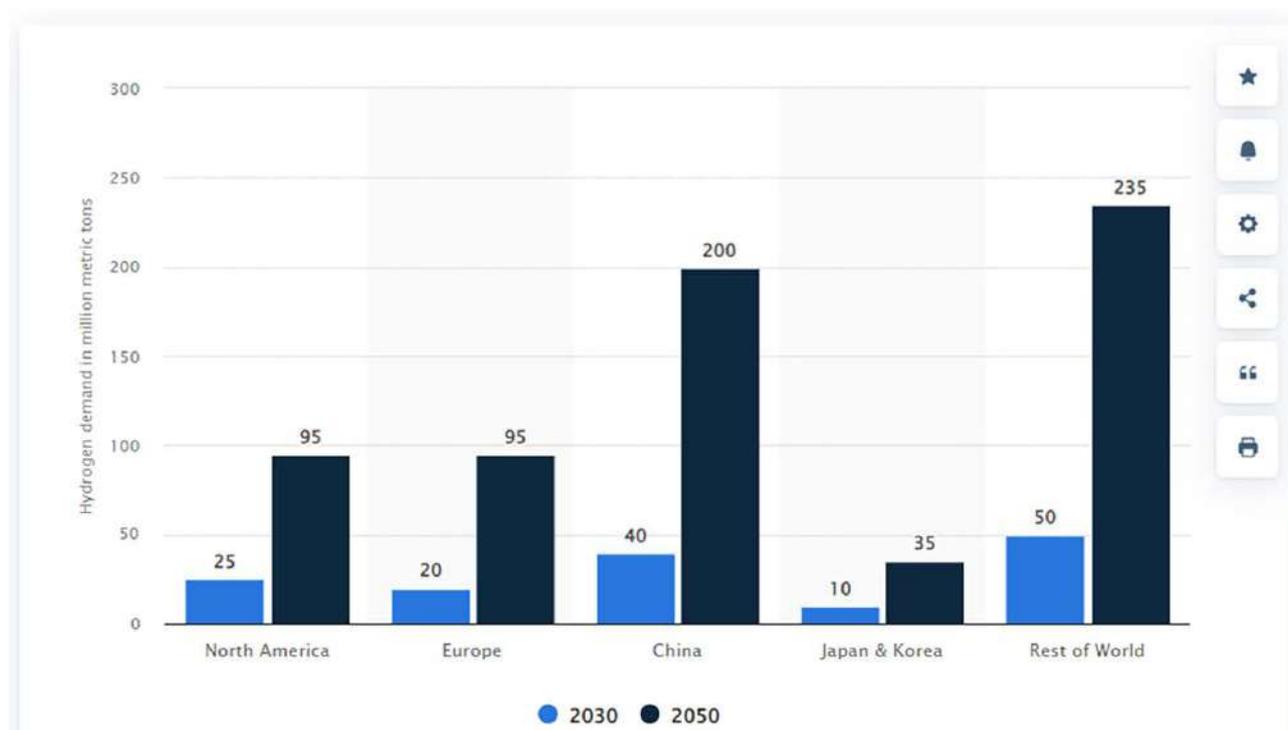
Another attractive market for the natural gas industry is the production of industrial gases. According to [Grand View Research](#), the global industrial gases market size is expected to deliver a 7.42% CAGR between 2023 and 2030. Such a growth rate is attractive and can be another long-term growth driver for Kazakhstan’s economy. Moreover, the industrial gases industry boasts high returns for investors. We can see this by the example of the world’s leading industrial gas producers like Linde plc, which is the world’s largest player with an above \$200 billion market capitalization. The company demonstrates consistent growth across all key metrics and is an apparent dividend growth superstar.

Historical Performance*



Source: Linde plc

The demand for industrial gases is expected to remain robust for decades as the world is shifting towards digitalization across various applications. There are various ways of producing hydrogen [H₂], but the most common way is by processing natural gas. The demand growth for hydrogen is expected to be robust over the next several decades as this gas is extensively used for electronics manufacturing in the semiconductor, display, LED, and photovoltaic application segments. According to [Statista](#), hydrogen demand is expected to grow multiple fold across the world between 2030 and 2050.



Source: [statista.com](https://www.statista.com)

That said, the natural gas industry is a thriving one and there are vast opportunities for it. As we saw above, there are strong secular trends that will highly likely support strong natural gas demand over the next several decades. The expected multiple-fold growth in demand for LNG and industrial gases suggests that gas processing plants will play a crucial role in the global energy security.

Natural gas industry in Kazakhstan

Kazakhstan's natural gas sector is shaped by several critical stakeholders across the value chain – from extraction to transportation and consumption. According to the data obtained from the [Analytical Platform EXia](#), 2.09 trillion cf [59.1 Bcm] of natural gas were produced in 2023. Major producers include giants like Tengizchevroil [TCO], Karachaganak Petroleum Operating [KPO], and North Caspian Operating Company [NCOC] each operating at significant fields like Tengiz, Karachaganak, and Kashagan. Total natural gas produced by these three companies in 2023 accounted for around 85% of the total production in our country.

Kazakhstan's current utilization of natural gas is highly likely not fully capitalizing on its potential. According to our country's natural gas balance between 2021 to 2023 presented below, a significant portion of the country's natural gas – about 34% – is used for reinjection into reservoirs to aid oil production, serving primarily an auxiliary function. The remaining 66% is largely consumed as fuel, with most processing focused on producing various fuel types. This indicates that the natural gas sector is predominantly engaged in low-profitability activities. Moreover, Kazakhstan lacks complex gas chemical processing facilities, which could otherwise be used to produce high-value industrial gases for sectors like semiconductors and electronics. This underutilization highlights the need for strategic development to enhance the economic

value derived from the country's natural gas resources. Financial performance of Linde plc over the last three decades coupled with the expected spike in demand for industrial gases to produce electronics and semiconductors suggests that there is a solid potential for Kazakhstan to capitalize on the secular digitalization trend if the country leverages production of high-value industrial gases.

billion cubic meters

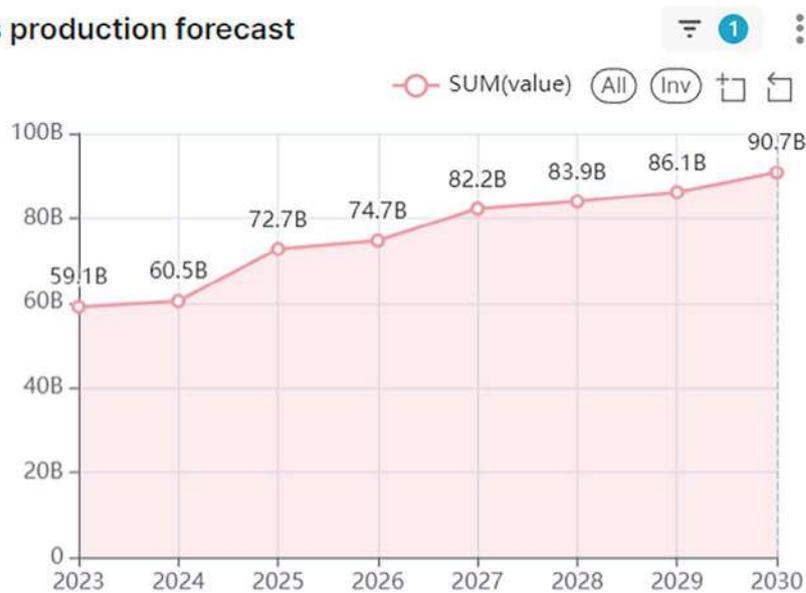
Indicators	2021	2022	2023	Average weight
(+) Import	2,29	1,34	0,90	
(+) Net production, including:	24,99	23,03	24,99	
<i>(+) Production</i>	<i>53,82</i>	<i>53,24</i>	<i>59,96</i>	
<i>(-) Reinjection</i>	<i>17,33</i>	<i>18,73</i>	<i>22,18</i>	<i>34%</i>
<i>(-) Processing</i>	<i>11,50</i>	<i>11,48</i>	<i>12,79</i>	<i>21%</i>
(-) Total sales, including	27,27	24,37	24,99	
<i>(-) Domestic market sales</i>	<i>18,60</i>	<i>19,36</i>	<i>19,43</i>	<i>33%</i>
<i>(-) Export sales</i>	<i>8,68</i>	<i>5,01</i>	<i>5,56</i>	<i>11%</i>

Source: Compiled based on data from the Analytical Platform EXia

The divergence between Kazakhstan's potential to increase natural gas production and its total gas balance dynamics over the past three years is a noteworthy trend. The chart below indicates that total gas production [before gas reinjection] is projected to reach approximately 3.2 trillion cubic feet [90.7 Bcm] by 2030, reflecting a robust 6.3% CAGR, according to the Ministry of Energy of the Republic of Kazakhstan. Meanwhile, the country's total gas production increased from 53.8 Bcm in 2021 to 60.0 Bcm in 2023, representing a 3.4% CAGR. This convergence suggests that while Kazakhstan has substantial potential to expand natural gas production, the processing infrastructure is currently insufficient to fully capitalize on this growth. The optimistic forecast may be hindered by processing bottlenecks, and unless these are addressed, the gap between production and processing capacities is likely to widen. The key problem is the economic unattractiveness of natural gas production and processing, as oil production companies do not have sufficient incentive to explore and extract natural gas other than associated one due to extremely low sales prices on the domestic market that give no chance for any meaningful return on investments. In addition to the low price on the domestic market, the current taxation system discourages the construction of new processing facilities, since marketable gas on the domestic market is taxed as if it were sold for export.

Part 2. Insights & Analytics

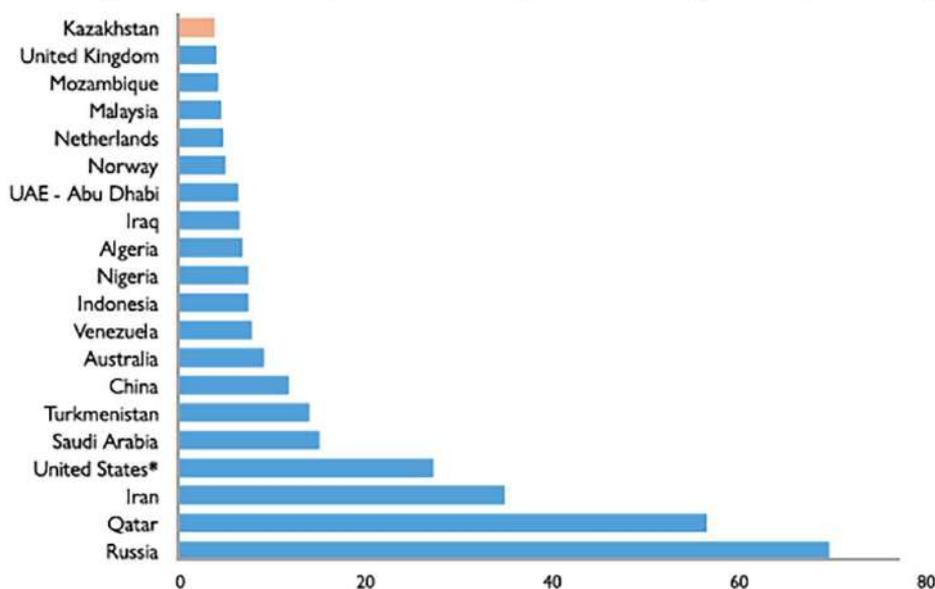
Gas production forecast



Source: Analytical Platform EXia

According to the National Energy Report 2023, Kazakhstan is among the top 20 countries by natural gas reserves. Data from the Analytical Platform EXia, based on information from the National Geological Service, the Precaspian Basin comprises around 88% of Kazakhstan's gas reserves and encompasses the three-supergiant oil and gas fields – Kashagan [48% of the country's total gas reserves], Karachaganak [26%], and Tengiz [14%] – the crown jewels in Kazakhstan's oil and gas industry. Two other important basins in the western part of the country – Mangyshlak-Central Caspian and North Ustyurt – possess more than 300 Bcm of recoverable reserves and have favorable exploration potential.

Figure 6.1 Top 20 countries by recoverable gas reserves (proven+probable) (Tcm)



Source: National Energy Report 2023

Therefore, in terms of natural gas extraction and reserves, Kazakhstan has a strong resource base. On the other hand, there is room for improvement from the processing domain's perspective. There are five major gas processing plants [GPZ] in Kazakhstan, a number of smaller plants, and also an important arrangement for the processing of Karachaganak's gas across the border at Russia's Orenburg gas processing plant. Total capacity of Kazakhstan's gas processing plants in 2023 was 38.8 Bcm/y with a utilization rate of 74%.

As we see, in contrast to North America, where natural gas processing capacity exceeds production volumes to ensure flexibility and efficiency, Kazakhstan faces the opposite challenge. The country's processing capacity is limited and falls short of the volumes being produced, creating bottlenecks and limiting the full utilization of its natural gas resources.

Table 6.6 Kazakhstan's gas processing plants

Gas processing plants	Capacity (Bcm/y)	Utilization in 2021 (%)
Tengiz GPZ	13.0	100%
Zhanazhol GPZ	8.4	62%
Bolashak GPZ	6.3	84%
Chinarevskaya GTU	4.2	16%
KazGPZ	1.5	60%
Shagyrlı GTU	1.3	73%
Amangeldy GPZ	0.7	49%
Akshabulak GTU	0.6	67%
Targabatay GPC	0.6	52%
Kozhasay GPC	0.4	100%
Alibekmola GTU	0.4	100%
Borankol GTU GPZ	0.4	10%
Severny Nurzhanov GPZ	0.2	100%
Karakuduk GPZ	0.1	26%
Arystanovskoe GTU	0.1	44%
Vostochny Makat GPZ	0.0	100%
EmirOil	0.0	87%
Balginbayev S. GPZ	0.0	100%
Kulzhan GTU	0.0	28%
<i>Kashagan GPZ (QazaqGaz)</i>	1.0	
<i>Zhanaozen GPZ</i>	0.9	
<i>KPO GPZ</i>	4.0	
<i>Kashagan GPZ</i>	4.0	

Notes: Italicized means planned GPZ.
Source: S&P Global, QazaqGaz.

© 2023 S&P Global.

Source: *National Energy Report 2023*

As we can see above, there is a processing plant Chinarevskaya GTU, which is operated by Zhaikmunai. This plant's utilization rate was extremely low at only 16% in 2021 due to the ongoing technical and commercial assessment by the operator KPO and Zhaikmunai regarding the potential use of Karachaganak gas for the plant. However, it appears that an agreement was not reached. Still, there is spare capacity for this large processing plant, which can be used for improving our country's gas processing potential. Moreover, four new gas processing plants are to be commissioned in Kazakhstan between 2026 and 2030: two at the Kashagan field with annual capacities of 1 and 2,5 Bcma, one at the Karachaganak field with a capacity of 4 Bcma,

Part 2. Insights & Analytics

and KazGPZ in Zhanaozen with a capacity of 0.9 Bcma. All these projects will increase the total processing capacity of our country from 38.8 Bcma to 48.7 Bcma, which is a 25% growth.

A 25% growth in processing capacity looks impressive without context. On the other hand, as we have shown in one of the above charts, Kazakhstan's total annual natural gas production is expected to grow to 3.2 trillion cu.ft. [90.7 Bcm] by 2030 from 2.09 trillion cf [59.1 Bcm] in 2023. Therefore, total natural gas production is expected to grow by 53% between 2023 and 2030. This means that even with four new gas processing plants that are expected to be commissioned by 2030, the gap between Kazakhstan's natural gas production and processing capacity is poised to widen.

Kazakhstan has a developed network of gas transportation pipelines which enables to ensure the country's energy security. QazaqGaz is Kazakhstan's national gas operator, involved in gas exploration, production, transportation, and distribution. Its subsidiaries manage a network of gas pipelines that spans approximately 76,800 km, including 20,800 km of large-diameter pipelines with an annual capacity of 260 Bcm of gas. The company also operates gas distribution networks covering 65,686 km. Additionally, the transportation infrastructure features 32 compressor stations equipped with 319 gas pumping units and 248 gas distribution stations. QazaqGaz represents the state in significant gas pipelines operated through joint ventures with international partners.

Table 6.7 Kazakhstan's existing main gas pipelines as of 1 January 2023

	Estimated total pipeline length (km) on Kazakh territory	Estimated throughput capacity (Bcm/y)	Number of strings	Diameter (mm)
Central Asia–Center (CAC)*	3,961	42.7	5	1,020 1,220
Central Asia–China Gas Pipeline (CAGP)**	1,830	59.1	3	1,067
Soyuz	423	24.4	1	1,420
Kartaly–Rudny–Kostanay	156	1.6	1	820
Orenburg–Novopskov***	382	16.0	1	1,220
Bukhara–Urals****	1,447	26.0	2	1,016
Okarem–Beyneu	545	7.2	2	1,015
Beyneu–Bozoy–Shymkent	1,450	15.0	1	1,067
Akshabulak–Kyzylorda	123	0.4	1	325
Bukhara–Tashkent–Bishkek–Almaty (BGR–TBA)****	792	5.8	2	1,020
Makat–North Caucasus	371	22.0	1	1,420
Gazli–Shymkent*****	309	4.4	1	1,220
SaryArka (Phase I)	1,061	2.2	1	820

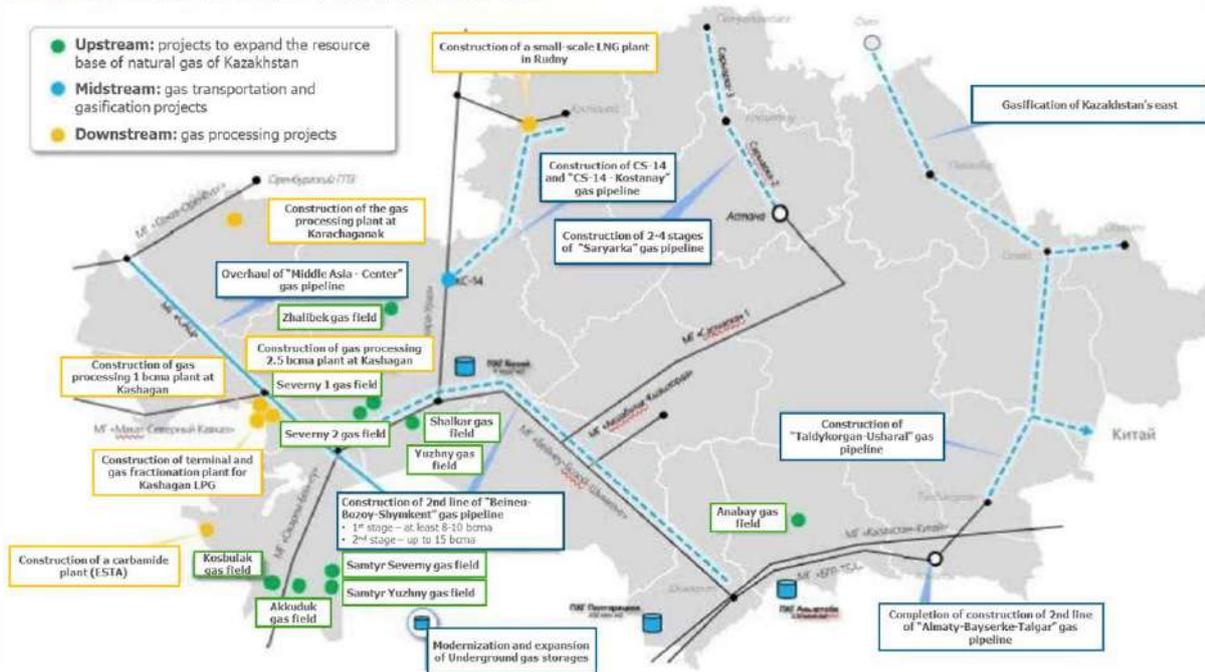
Source: National Energy Report 2023

The operation of Kazakhstan's gas transportation infrastructure faces significant challenges due to high deterioration rates, with many pipelines exceeding their designed lifespan and low throughput capacity. The core infrastructure, largely from the Soviet era, has an average

wear rate of over 70%, necessitating extensive modernization efforts and upgrades, including new infrastructure projects and defect repairs. Despite ongoing improvements and increased gasification efforts, the system’s age and condition continue to pose risks to efficient operation and capacity.

We have to give credit to QazaqGaz’ management as the company is undertaking a number of projects to upgrade, strengthen, and build out gas infrastructure to facilitate the growth of gas consumption and to reach strategic gasification goals. However, the successful implementation of these numerous projects hinges on attracting serious, long-term investors. In the current challenging natural gas economy, securing such investment requires a balanced approach that aligns investor interests with the nation’s broader objectives.

QazaqGaz planned development projects 2024-2028



Source: QazaqGaz, adapted from Russian language

The Bottom Line

In conclusion, the global natural gas industry is well-positioned to thrive due to shifting energy dynamics and expanding opportunities in LNG and industrial gases. Kazakhstan, with its substantial natural gas resources and production capabilities, holds a strong strategic position. However, the country faces notable bottlenecks and challenges in processing and transportation. To capitalize on its potential, a comprehensive approach involving all key stakeholders – including the government, major industry players, and investors – is essential. There must be a concerted effort to expedite ongoing processing and transportation projects and to explore opportunities for capacity expansion to fully leverage Kazakhstan’s natural gas potential. Moreover, expanding gas production will enable Kazakhstan to boost oil extraction, as gas is also injected into reservoirs to enhance oil recovery, importance of which was covered in our [«Crude Oil - Upward Trend»](#) article. Certainly, new solutions and approaches are needed to unlock the potential of our country’s natural gas industry by addressing the complex energy trilemma – balancing security and accessibility, economic feasibility, and sustainability with carbon neutrality. Successfully navigating these constraints will ultimately define the future of Kazakhstan’s energy security.

TENGIZ EFFECT – 2033 AND BEYOND

The future of the Tengiz project is vital to Kazakhstan's economy and strategic interests. A balanced contract between the government and investors is essential to ensure continued contributions from the Tengiz field to the country's growth, ensuring that the benefits are distributed fairly and sustainably.

The article was first published on www.exia.kz on September 13, 2024

Introduction

The Tengizchevroil [TCO] project stands as a cornerstone of Kazakhstan's oil industry, representing a significant portion of the country's crude oil production and reserves. As a pioneer of stabilized contracts in Kazakhstan, TCO's concession is nearing its end in 2033, necessitating a strategic approach to establish a new balance of interests that benefits both the Republic of Kazakhstan and the shareholders. The project's technical complexity and capital intensity underscore its importance to the national economy, making it crucial to negotiate terms that are advantageous for Kazakhstan while remaining acceptable to investors.

The TCO project is not just an oil field; it is a symbol of Kazakhstan's economic aspirations and its integration into the global energy market. This project has essentially become the cornerstone of economic legitimacy for a newly independent Kazakhstan. The involvement of major international investors demonstrated global business confidence in our country's long-term potential. The project's success has been built on a foundation of international cooperation, technological innovation, and strategic foresight. As the end of the current concession approaches, Kazakhstan faces the challenge of renegotiating terms that will continue to attract foreign investment while maximizing the benefits for its economy. This delicate balance requires a nuanced understanding of both the global oil market and the specific needs of the Kazakhstani economy.

About TCO and its footprint in Kazakhstan

Tengizchevroil is a joint venture established in 1993 to manage the development and operation of the Tengiz oil field, one of the world's largest and deepest oil fields, located in the southern Pre-Caspian basin of Kazakhstan. The venture is a collaboration between Chevron [holding a 50% stake], ExxonMobil [25%], KazMunayGaz [20%], and Lukoil [5%].

TCO operates the Tengiz and Korolevskoye fields, which together hold estimated recoverable crude oil reserves of 936 million tons [approximately 7.48 billion barrels using a conversion factor of 7.98 barrels per ton] as of the end of 2022, representing 21% of the total recoverable oil reserves in Kazakhstan. Additionally, the fields contain 469 billion cubic meters of gas [approximately 16.57 trillion cubic feet using a conversion factor of 35.35 cubic feet per cubic meter], accounting for 12% of the total recoverable gas reserves in Kazakhstan.

TCO plays a vital role for Kazakhstan's economy. As we have mentioned in one of our previous articles, [«Crude Oil – Upward Trend»](#), the company is by far the largest player in the oil industry as it produces around one-third of the country's total crude oil output. Since its inception as a joint venture, the company has produced 561 million tons of oil between 1993 and 2023, which accounts for 29% of the country's total oil production over the same period. Since TCO invests heavily in expanding its production capacity, its importance for Kazakhstan's

Part 2. Insights & Analytics

economy is poised to remain very high for the next decade. As a result of these efforts, TCO is poised to solidify its dominance in Kazakhstan's oil industry, with its share of the country's total oil output projected to expand to 43% by 2033 when current concession for Tengiz expires. According to our estimates, to that date recoverable crude oil reserves [A+B+C1+C2 categories of Kazakhstan's classification] of Tengiz and Korolevskoye fields still vast 534 million tons. TCO also boasts a significant footprint in Kazakhstan's natural gas production, which we mentioned in our [«Natural Gas – Kazakhstan's Great Expectations»](#) article. TCO's impact on Kazakhstan is difficult to overestimate. The project fueled the creation of crucial infrastructure facilities such as the CPC pipeline, and it will continue to be the foundation for the development of Kazakhstan's economy in the future, including initiatives like chemical gas projects.

Description	Projection (current concession expires in 2033)		
	2024, mln tons	2033, mln tons	2035, mln tons
TCO's oil output	29.0	39.9	36.3
Kazakhstan's oil output	89.6	91.9	81.7
TCO's share	32%	43%	44%

Source: Compiled based on data from Analytical Platform EXia

According to TCO's FY2023 financial statements, crude oil is the major revenue stream that contributed around 97% to total sales. The company's FY 2023 revenue contributed around 7% to the country's GDP. TCO's oil is exported via the Caspian Pipeline Consortium [CPC], which has undergone several debottlenecking projects to increase its capacity to accommodate future production increases.

Tengizchevroil LLP

Notes to the Summary Financial Statements (continued)

3. Crude Oil and Other Product Revenue

	2023 US \$000	2022 US \$000	2021 US \$000
Crude Oil			
Pipeline	18,658,382	22,473,725	14,704,074
Rail	-	3,176	-
Total Crude Oil Revenue	18,658,382	22,476,901	14,704,074
Other Products			
LPG	410,389	542,492	749,115
Sulfur	203,519	458,302	358,528
Natural Gas	16,003	317,120	114,858
Total Other Products Revenue	629,911	1,317,914	1,222,501
Total Crude Oil and Other Products Revenue	19,288,293	23,794,815	15,926,575

Source: TCO's FY2023 audited financial statements

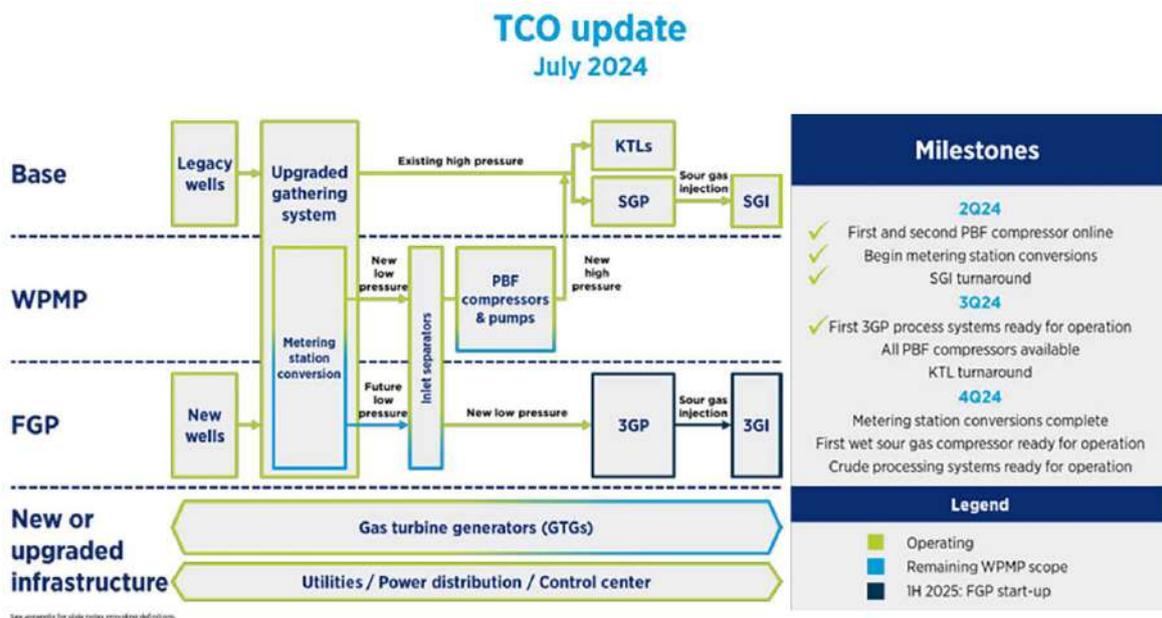
According to the [company's website](#), direct financial benefits for Kazakhstan since 1993 totaled \$196 billion. The note from the company suggests that this amount includes Kazakhstani employees' salaries, purchases of Kazakhstani goods and services, tariffs and fees paid to state-owned companies, profit distributions to Kazakhstani shareholder and taxes and royalties paid to the government. We will explore TCO's taxation in greater detail later in our article.

The Tengiz Field and FGP/WPMP project

The Tengiz field, discovered in 1979, is notable for its challenging geological conditions, including high temperatures, abnormal reservoir pressures, and high hydrogen sulfide content. Since its inception, TCO has implemented various projects to enhance production capacity and manage complex subsurface conditions, including the Sour Gas Injection and Second-Generation Plant projects. The field’s depth and pressure present unique challenges that require cutting-edge technology and expertise.

The Future Growth Project – Wellhead Pressure Management Project [FGP/WPMP] is a major expansion initiative with a total investment of approximately \$46.7 billion. This project is expected to increase TCO’s production by 12 million tons annually, reaching a total of 39 million tons per year. The FGP/WPMP project represents a significant investment in the future of Kazakhstan’s oil industry. By significantly increasing production capacity, the project aims to secure Kazakhstan’s position as a leading oil producer in the region. The challenges faced by the project in its early stages, including delays and cost overruns, highlight the complexities of managing large-scale industrial projects in a rapidly changing global environment. However, the potential benefits of the project, both in terms of increased production and economic growth, make it a vital component of Kazakhstan’s long-term energy strategy. Moreover, recent developments around the project are quite optimistic.

According to the information [as of April 25, 2024](#), TCO has successfully initiated operations at its WPMP facilities. This milestone involves the conversion of the first metering station to low pressure and the activation of the associated Pressure Boost Facility [PBF]. The WPMP is a crucial component of TCO’s broader expansion efforts at Tengiz, aimed at maintaining the processing plants’ full capacity of approximately 28 million tons per annum. This is achieved by reducing the flowing pressure at the wellheads and subsequently boosting it to the existing plants. The startup of additional PBF compressors and the conversion of remaining metering stations are planned to continue throughout the year.



See appendix for slide notes providing definitions.

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Source: Chevron’s fiscal Q2 2024 earnings call presentation

During Chevron's latest earnings call, the management reiterated its cost and schedule guidance for the FGP project. According to the above slide from Chevron, the FGP is expected to start up in the first half of 2025. According to the latest official release from TCO [as of September 3](#), it has successfully completed planned turnaround maintenance at the Complex Technological Lines [KTL] plant located at the Tengiz oil field. Moreover, Chevron's management has also emphasized that WPMP is «operating very reliably» and that they are pleased with the performance of the equipment.

TCO and The Government Take

As we mentioned above, the company claims that direct financial benefits for Kazakhstan since TCO's inception totaled almost \$200 billion. The amount is massive, but we believe that any figure becomes more valuable when we add more context and add more forward-looking analysis by simulating various scenarios for the future.

Before we simulate scenarios, let us briefly recap some crucial details about TCO's tax regime. The fiscal regime for TCO includes two types of royalties and a corporate income tax [CIT] of 30%. According to TCO's [FY 2022 financial statements](#), there are Base Royalty and Incremental Royalty.

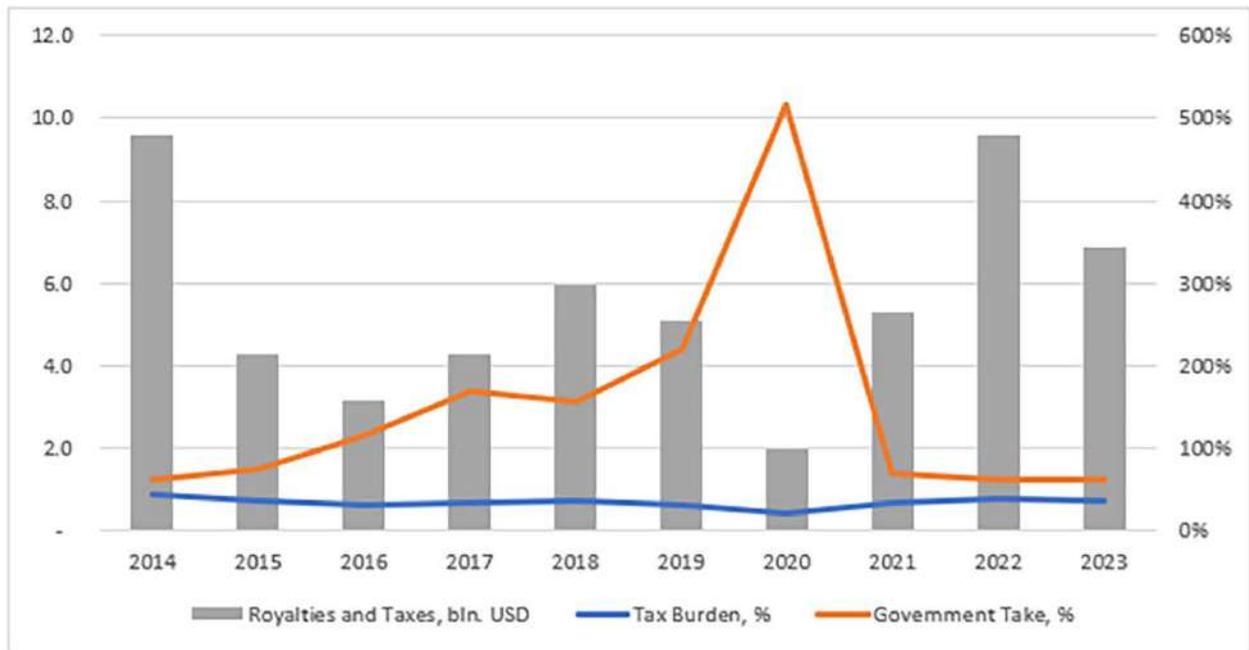
Base Royalty is calculated at the rate of 25% on the Dollar Value Equivalent, as defined in the Partnership Agreements as revenue from crude oil and other product sales after deducting transportation and marketing expenses, all non-well operating costs and depreciation of non-well facilities using a five-year straight-line depreciation method.

Incremental Royalty is calculated at the rate of 15% on the Net Cash Position as defined in the Partnership Agreements. In accordance with the Partnership Agreements, Net VAT [as defined in the Partnership Agreements] and certain taxes, fees, duties and government exactions in excess of the amounts prescribed in the Partnership Agreements [known as Applicable Taxes] are offset against Royalty Payable and can also be offset against Income Tax, if necessary.

The fiscal regime governing relationships between the country and TCO is designed to balance the interests of the Kazakhstani government and the international investors involved in the project. By tying royalties to production and export revenues, the regime ensures that the government benefits from the field's success while providing incentives for continued investment and production. CIT further aligns the interests of the government and investors, ensuring that both parties share in the project's success.

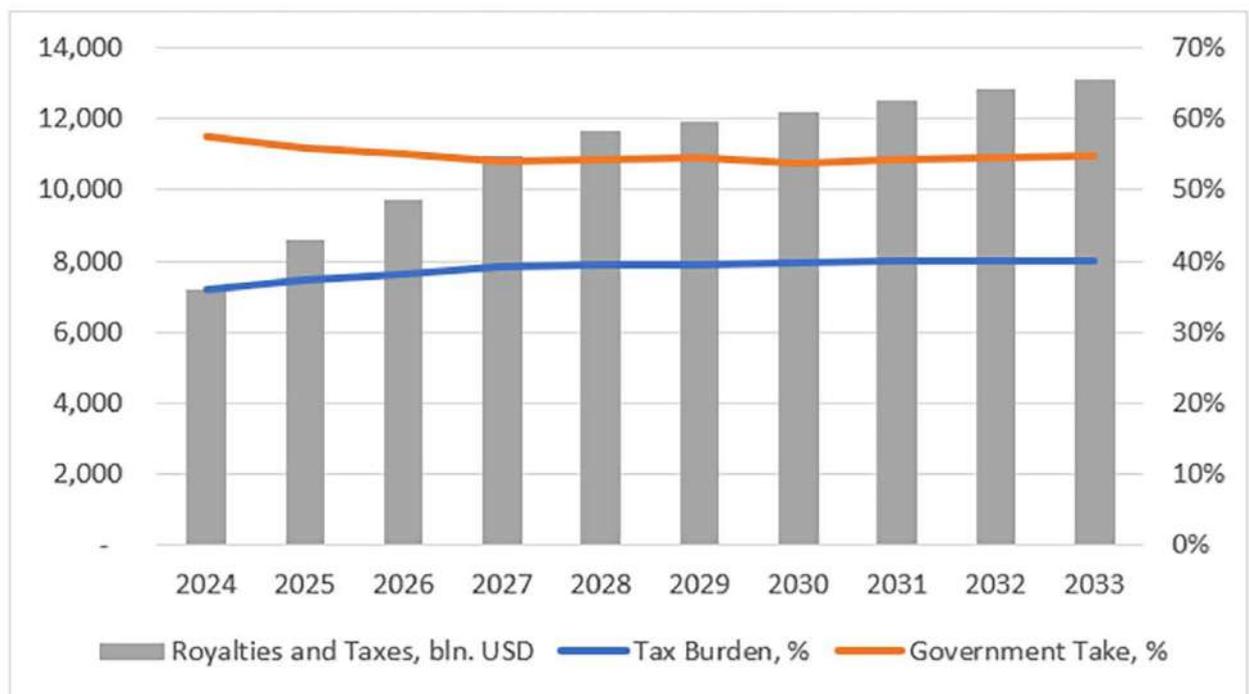
Looking at historical trends is also crucial to better understand context. Therefore, let us examine the trend of Kazakhstan's cash inflows from TCO over the past decade. Two key metrics provide valuable insights: Tax Burden and Government Take. Tax Burden is calculated as the sum of royalties and taxes divided by revenue, while Government Take is the sum of royalties and taxes divided by the divisible cash flow (Revenue – OpEx - CapEx).

The chart below underscores the high sensitivity of total royalties and taxes to crude oil prices, with the highest levels observed in 2014 and 2022. The period between 2015 and 2021 saw much lower average crude oil prices, resulting in significantly lower royalties and taxes. The Government Take grew exponentially between 2015 and 2020 due to a dip in divisible cash flow caused by lower crude oil prices, and this adverse effect was exacerbated by heavy capital spending on the FGP/WPMP project.



Source: Compiled by ENERGY Insight & Analytics

Since the FGP/WPMP project aims to significantly increase TCO’s oil production levels, we can expect robust growth in total royalties and taxes over the next decade. If the company achieves an oil production level of around 40 million tons per year by 2028, and crude oil prices remain within the \$90-\$100 per barrel range, the Government Take is likely to reach approximately 55%. The chart below outlines the projected inflows from TCO between 2024 and 2033.



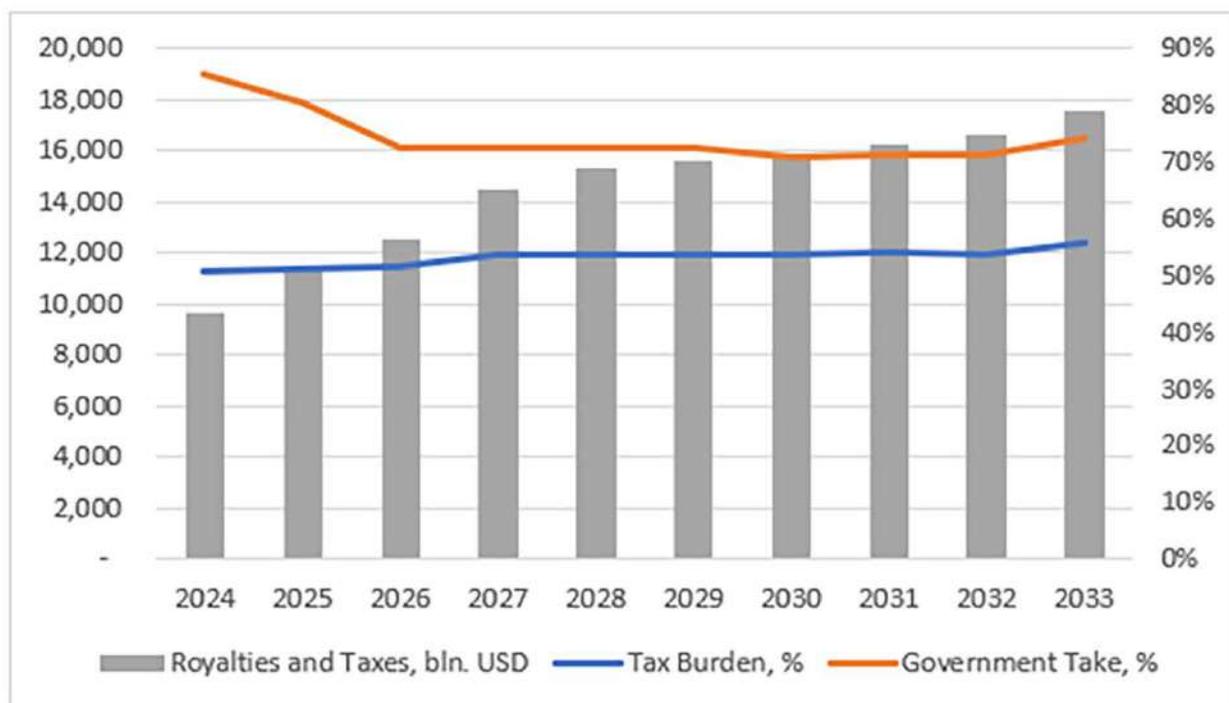
Source: Compiled by ENERGY Insight & Analytics

Part 2. Insights & Analytics

The above model's horizon ends in 2033, which is termination year of TCO's concession for Tengiz field. It is extremely unlikely that there will be changes made to the fiscal regime until the current concession expires. The expiration is almost a decade away, but the question is already vital both for our country and TCO's investors beyond KazMunaiGas. For example, during [Chevron's latest earnings call](#), Neil Mehta from Goldman Sachs addressed a question about Tengiz concession extension to Chevron's management. This underscores the importance of this issue for the U.S. oil giants as well.

The extension of the concession is likely to offer Kazakhstan opportunities to negotiate more favorable economic terms. As an emerging nation, Kazakhstan's political institutions are evolving towards more democratic practices, which is likely to reduce risks for foreign investors. If the country maintains this trajectory, it will likely be in a stronger position to negotiate terms for the Tengiz concession compared to previous rounds. Although the level of uncertainty remains high, we propose conducting an exercise to estimate the potential government revenue from TCO if it operates under the General tax regime for oil producers.

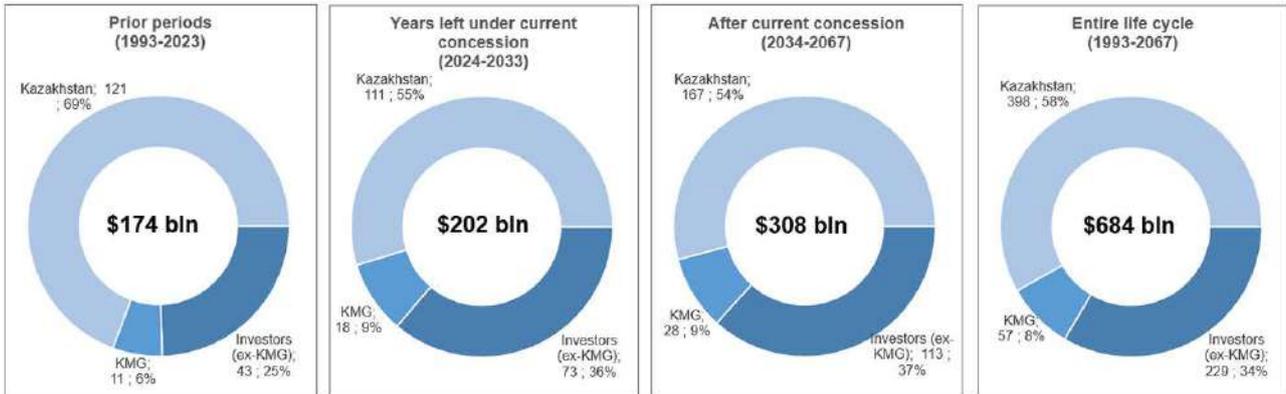
The chart below outlines how the Tax Burden and Government Take dynamics might behave over the next decade if (theoretically) the General tax regime is applied to TCO. A Tax Burden above 50% and a Government Take above 70% are unlikely to be economically viable for investors. Such high values are due to unsuitable Mineral Extraction Tax's scale for mega oil fields like Tengiz. For example, the actual Tax Burden for 2023 for companies working under the general tax regime assessed for 37%. Moreover, Tengiz is a unique oil field with a wide array of technological challenges and risks, requiring deep expertise and substantial investments to maintain and develop its potential. Therefore, negotiating royalties and taxation terms for the concession after 2033 should balance investors' interests, aiming to achieve a 'Golden Middle' between TCO's current and general tax regimes.



Source: Compiled by ENERGY Insight & Analytics

We understand that the favorable tax regime has been instrumental in attracting and retaining foreign investment, ensuring that the Tengiz field continues to contribute to Kazakhstan’s economic growth. However, we believe that simulating different scenarios will help in finding the balance between the interests of TCO’s foreign investors and our country’s.

Negotiations between Kazakhstan and investors regarding the terms and conditions for the new concession effective after 2033 are a vital strategic topic for our country, with significant economic implications for the coming decades. The FGP/WPMP project is likely to enhance future benefits for Kazakhstan and KazMunayGaz [KMG] compared to previous periods.



Source: Compiled by ENERGY Insight & Analytics

The historical tax contributions of TCO underscore its importance to Kazakhstan’s economy. As the largest taxpayer in the country, TCO plays a critical role in funding government programs and services. As the end of the current concession approaches, it is essential to maintain a fiscal environment that supports continued investment and production.

The Bottom Line

The future of the Tengizchevroil project is critical to Kazakhstan’s economic and strategic interests. By negotiating a new contract that balances the interests of the government and investors, Kazakhstan can ensure that the Tengiz field continues to contribute to its economic growth and development. The success of the project will depend on the ability of all parties to work together to address the challenges and opportunities that lie ahead, ensuring that the benefits of the Tengiz field are shared equitably and sustainably.

TAX BURDEN – ORDER OF MERIT 2023

Tax policy is crucial both for replenishing the republican budget and for encouraging investment in exploration and new technologies, particularly in mature or hard-to-recover fields. Kazakhstan’s new Tax code should [finally] achieve both objectives.

The article was first published on www.exia.kz on September 30, 2024

Introduction

The problem of the tax burden on oil producing companies² in Kazakhstan is of great interest, considering their significant share in total tax revenues and the expected changes in new Tax Code. In this article, special attention is paid to the general tax regime [GTR], since about 90% of about 100 oil producing companies operate under this regime. These companies provide 31% of the total oil production, but their share in supplies to the domestic market is 96%. The GTR regulates the tax obligations of companies operating under this regime within the framework of the Tax Code of the Republic of Kazakhstan, while taxation under production sharing agreements [PSA] and improved model contracts [IMC] is governed by their own terms. The state and interested parties still have time to improve GTR, which underlines the importance of adapting tax policy to changing economic conditions and significant budget revenues from the oil sector [1.5 trillion tenge³ from companies operating on GTR were received on budget of the Republic of Kazakhstan in 2023].



Source: Compiled by ENERGY Insight & Analytics

It is extremely important to understand that in addition to its main fiscal function – replenishing the republican budget in a certain period – the Tax Code should also encourage subsoil users to increase the potential of their business through capital investments and geological

² In this article, only oil producing companies are considered. Other companies in the oil and gas sector [transportation, refining, oilfield services, gas business] are outside the boundaries of this analysis.

³ For reference: the average exchange rate in 2023 was 456.31 tenge/US dollar

exploration. The diagram above shows a clear picture: over the past few years, the production of companies working on GTR has decreased by more than 20%, from almost 38 million tons per year to 30 million tons. At the same time, the production of companies working on PSA has increased. In this regard, it is likely that the current GTR requires improvements in terms of incentives for subsoil users to invest more actively in maintaining and expanding their business.

GTR overview

In Kazakhstan, the current tax regime for oil companies includes several key taxes that significantly affect the financial burden of enterprises in this industry [the tax burden is calculated as the sum of payments and taxes divided by revenue]. The main taxes applied to companies engaged in the exploration and production of hydrocarbons include:

Mineral Extraction Tax [MET]: This tax is levied on the extraction of crude oil, gas condensate and natural gas. MET is an ad valorem tax, the rate of which increases with the growth of the company's annual production volume. For oil exported outside Kazakhstan, MET rate is twice as high as for oil sold on the domestic market. In some cases, for fields with unfavorable economic conditions, the government may reduce MET.

Export Customs Duty [ECD]: This duty varies monthly depending on world oil prices and is set by the Ministry of National Economy. Supplies to the EAEU markets are exempt from this duty. In 2023, there were changes in the methodology for calculating the duty, including the replacement of the quotation of Russian Urals Blend oil with the Kazakh KEBCO grade.

Rent tax on exports: This tax is applied to the value of exported crude oil and gas condensate. The tax rate increases with an increase in the price of oil, starting from the level of 50 US dollar per barrel, and can reach 32%. Unlike ECD, the rent tax is also applied to exports to the EAEU markets.

Corporate income tax [CIT]: According to GTR, CIT rate of 20% of the tax base is applied to all companies.

Excess profit tax [EPT]: a tax levied on additional income that a subsurface user receives in excess of established standards. The object of taxation is a part of net income exceeding 25% of the amount of deductions determined for calculating the EPT.

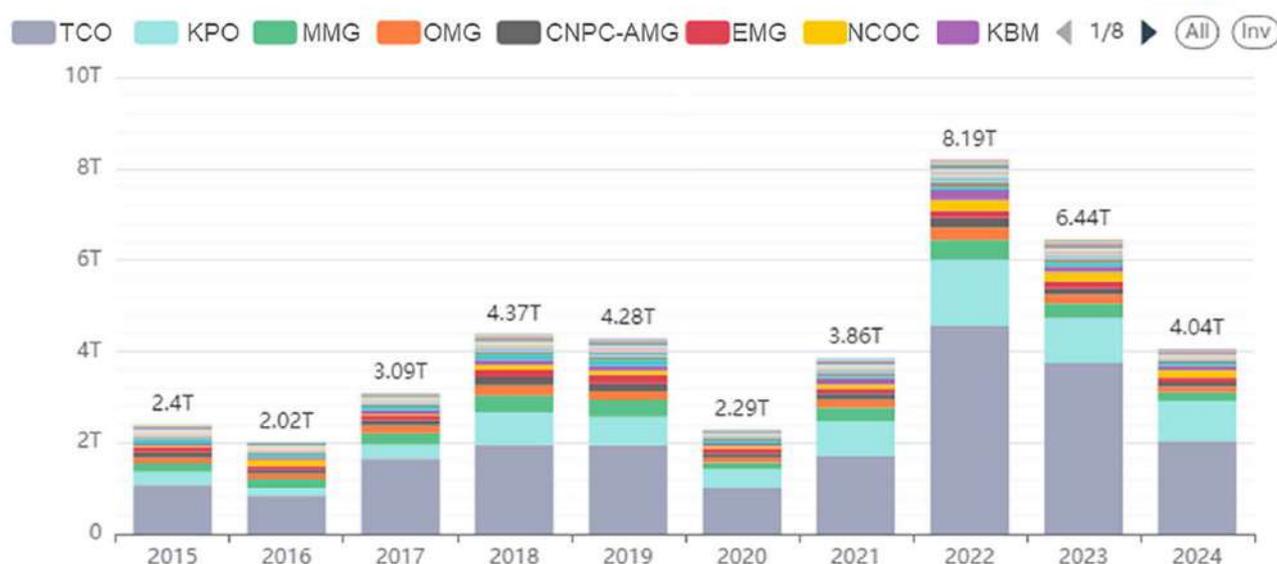
The current tax regime in Kazakhstan, according to S&P Global, has low investment attractiveness, which affects the country's ratings in the field of exploration and production of hydrocarbons. According to data from the KAZENERGY National Energy Report for 2023 [NER 2023], the country then ranked 78th out of the 112 countries evaluated by S&P Global in terms of overall E&P attractiveness. With respect to S&P Global's Fiscal Systems indicator (i.e., tax environment), the Republic of Kazakhstan is only in the 95th position out of the same 112. This is due to the high tax burden, which does not stimulate investment in oil production, especially in low-profit fields. The Government of the Republic of Kazakhstan is considering the possibility of optimizing the tax regime, including providing fiscal incentives for mature and complex oilfields.

In addition, S&P Global analysis presented in NER 2023 shows that the conditions of IMC in Kazakhstan may not fully stimulate new investments in production. Existing contracts retain problematic aspects, such as the lack of clarity of local content requirements. This creates obstacles to attracting investors, including general taxes, environmental, and general regulatory terms that are not «locked» and stable throughout the project lifetime. Strict administrative requirements and obligations of companies are also noted, it can negatively affect the attractiveness of projects.

Results of 2023

According to the data of the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan [SRC MF RK], in 2023 budget revenues from oil companies amounted to 6.44 trillion tenge. Our analysis includes the 50 largest oil producing companies, which in 2023 produced a total of 87.3 million tons of oil, which is approximately 97% of the total oil production in Kazakhstan during this period. We believe that 97% coverage is a sufficiently representative sample to continue our analysis.

Dynamics of tax paid by oil producers



Source: EXia Analytical Platform

Note: in 2024 the receipts for the period from January to August 2024 are indicated

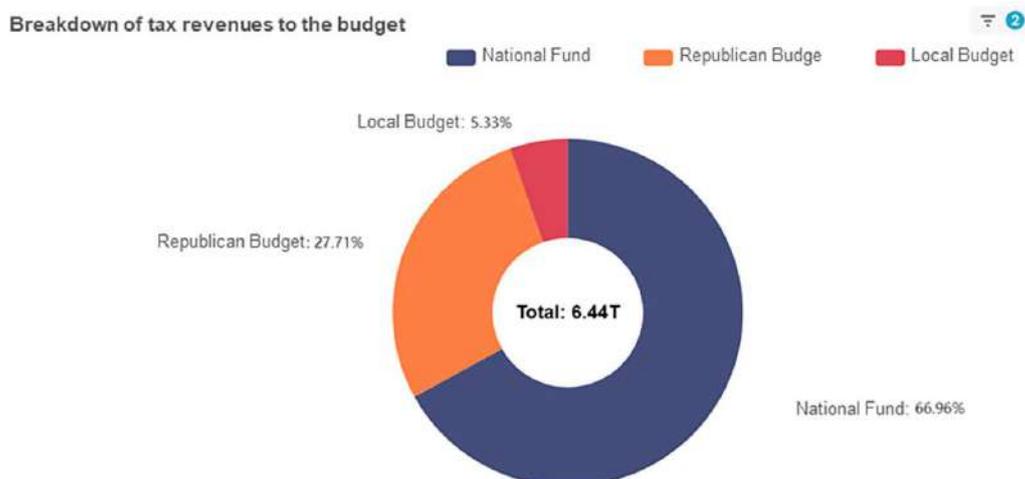
The largest oil producing company in our country, Tengizchevroil [TCO], is the undisputed leader in terms of payments to the budget. In 2023, the company TCO paid 3.7 trillion tenge to the budget of the Republic of Kazakhstan, which is 58% of all payments from oil producing companies. The top 10 taxpayers among oil producing companies also include Karachaganak Petroleum Operating [KPO] with a 15% share, Mangistaumunaigas [MMG] with a 5% share, North Caspian Operating Company [NCOC] with a 3% share and Ozenmunaigas [OMG] with a 3% share. The total share of the top 10 taxpayers amounted to 93% of the entire oil industry, or 6 trillion tenge.

It is important to note that companies such as TCO and KPO are not only the largest taxpayers in absolute terms, but also the leaders in relative terms. This is especially noticeable if we consider the taxes paid per ton of oil produced. According to the results of 2023, TCO ranks first among ten large oil producing companies with almost 130 thousand tenge of taxes per ton. KPO follows in second place with about 81 thousand tenge per ton, followed by Caspian Oil with 80.4 thousand tenge per ton. The difference between the other companies is less significant, but NCOC stands out with an indicator of 11 thousand tenge per ton, which is due to the reason set out below. The table below once again underlines the importance of TCO as a taxpayer for the republican budget, we described this in more detail in our previous article [«Tengiz Effect – 2033 and further»](#).

Company	Type of contract	Taxes paid in 2023, billion tenge	Production 2023, million tons	Taxes per ton, thousand tenge/ton
TCO	stabilized contract	3,746.4	28.9	129.7
KPO	PSA	980.2	12.1	81.3
MMG	GTR	319.9	6.2	52.0
NCOC	PSA	204.3	18.8	10.9
OMG	GTR	198.9	4.9	40.8
EmbaMunaiGas	GTR	146.7	2.7	53.9
SNPS-Aktobemunaigas	GTR	134.8	2.7	50.4
Karazhanbasmunai	GTR	128.7	2.1	62.7
Kazgermunai	GTR	77.9	1.2	65.6
Caspian Oil	GTR	72.6	0.9	80.4
Other 40 companies	mostly GTR	427.0	7.0	61.1
TOTAL	-	6,437.4	87.3	73.7
TOTAL PSA/stabilized contract	-	4,931.0	59.7	82.6
TOTAL GTR	-	1,506.5	27.6	54.7

Source: Compiled by ENERGY Insight & Analytics

For understanding, we also emphasize that about 2/3 [67%] of the total tax revenues from oil producing companies of the Republic of Kazakhstan are directed to the National Fund of the Republic of Kazakhstan, and just over a quarter [27%] is distributed in favor of the Republican budget. The remaining 6% is distributed in favor of local budgets.



Source: EXia Analytical Platform

Part 2. Insights & Analytics

The table below shows the top 10 oil producing companies of the Republic of Kazakhstan by revenue, indicating taxes paid and tax burden for 2023. The average [weighted average] tax burden by the end of 2023 was 29% for all types of tax regimes, while the difference in tax burden values between PSA/stabilized contract regimes [28%] and GTR [35%] is 6%. As can be seen, the average tax burden between companies operating under a PSA/stabilized contract and GTR is comparable. The exception is NCOC, whose tax burden is only 4%. However, this is a temporary occurrence, since the company has not yet reached the indicators [triggers] at which it will transfer to a higher tax burden. It is expected that upon reaching the triggers, the tax burden for NCOC will be about 29%, which approximately corresponds to the current level of tax burden.

Company	Type of contract	Revenue 2023, billion tenge*	Taxes paid in 2023, billion tenge	Tax burden 2023, %
TCO	stabilized contract	8,876.6	3,746.4	42%
NCOC	PSA	5,601.9	204.3	4%
KPO	PSA	3,230.2	980.2	30%
MMG	GTR	878.4	319.9	36%
OMG	GTR	784.3	198.9	25%
EmbaMunaiGas	GTR	402.7	146.7	36%
Karazhanbasmunai	GTR	419.8	128.7	31%
SNPS-Aktobemunaigas	GTR	424.9	134.8	32%
Caspian Oil	GTR	142.6	72.6	51%
Kazgermunai	GTR	145.8	77.9	53%
Other 37 companies**	mostly GTR	1,073.6	414.6	39%
TOTAL	-	21,980.8	6,425.0	29%
TOTAL PSA/stabilized contract	-	17,708.8	4,931.0	28%
TOTAL PSA/stabilized contract without NCOC	-	12,106.8	4,726.7	39%
TOTAL GTR	-	4,272.0	1,494.1	35%

Source: Compiled by ENERGY Insight & Analytics

* Revenue according to standalone [not consolidated] financial statements of companies, revenue of NCOC and KPO – assessment of ENERGY Insight & Analytics.

** For three companies, financial statements are not posted on the resource of the Financial Reporting Depository of the Ministry of Finance of the Republic of Kazakhstan, they are excluded for analysis purposes.

In the Unified State System of Subsoil Use Management of the Republic of Kazakhstan [USSM], subsoil users provide reports as part of the fulfillment of contractual obligations, including on payments paid to the budget of the Republic of Kazakhstan. Tax information is published in USSM as part of the Extractive Industries Transparency Initiative [EITI] and is analyzed by us on a regular basis. Thus, the amount of revenues to the budget of the Republic of Kazakhstan for 2023, according to USSM amounted to 5.8 trillion tenge from the 50 largest

oil producing companies, compared with 6.4 trillion tenge from the same companies, according to the SRC MF RK. A significant discrepancy between the data of the SRC MF RK and USSM is explained by the fact that USSM for 2023 contains information on only 38 of the 50 oil producing companies considered.

Factors affecting tax revenues

Tax revenues are influenced by several key factors, such as the average price of Brent crude oil, the exchange rate of tenge to the US dollar, and the volume of oil production and exports. However, it is important to keep in mind that there is no 100% correlation between these factors and tax revenues, since there is a time lag due to the fact that taxes are paid with a certain delay. Usually, taxes for the previous quarter are paid in the next quarter, which creates a temporary difference between the accrual and payment of taxes to the budget.

Year	The amount of taxes, trillion tenge	The average price of Brent, USD/barrel	Average exchange rate, tenge/USD	Oil exports, million tons
2021	3.86	70.86	426.03	65.71
2022	8.19	100.93	460.48	64.32
2023	6.44	82.49	456.31	70.54

Source: Compiled by ENERGY Insight & Analytics

The increase in tax revenues between 2021 and 2022 was more than doubled due to several factors. The main role was played by a significant increase in the average price of Brent crude oil by 42%, from about 71 to almost 101 US dollar per barrel. This factor provided an increase in taxes in the amount of 3.8 trillion tenge, or 89% of the total change. In addition, the increase in tax revenues in 2022 was facilitated by an increase in the average exchange rate of tenge to US dollar, from 426 to 460. The decrease in oil exports by 4% did not have a significant impact.

In 2023, on the contrary, tax revenues decreased by 1.8 trillion tenge, which is primarily due to a drop in oil prices by almost 18% compared to the previous year. All other things being equal, the factor of the decline in the price of Brent reduced the amount of taxes by 3.1 trillion tenge. An additional unfavorable factor for budget revenues was the strengthening of the tenge against US dollar. The growth of oil exports by 9.6% in 2023 only partially [by 1.5 trillion tenge] compensated for the fall in oil prices and the strengthening of the tenge.

Preliminary results for 2024

Understanding the key factors affecting tax revenues from oil production is critically important for planning the republican budget. In addition, due to the high volatility of energy prices, it is critically important to recognize trend reversals in a timely manner and reflect budget adjustments taking into account changing input data.

This is especially critical for our country, given the dominant role of the oil and gas industry, especially in terms of tax revenues. According to the Law of the Republic of Kazakhstan dated December 5, 2023 No. 43-VIII LRK «On the Republican budget for 2024-2026», 7.6 trillion tenge is planned for 2024 in the form of tax revenues from oil companies to the National Fund of the Republic of Kazakhstan and in the form of ECD. It means that the share of the industry

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in the total revenues of the republican budget [excluding transfers from the National Fund of the Republic of Kazakhstan] and the National Fund of the Republic of Kazakhstan is set at 34% in 2024.

However, there is a fairly high probability that the target of 7.6 trillion tenge from oil production will not be reached by the end of the year. According to the reports on the [execution of the republican budget](#) and [information on tax receipts and payments to the National Fund](#) as of September 1, 2024, the fact of revenues for the first half of 2024 from oil production amounted to 3.7 trillion tenge, that is, 49% of the annual plan. It means that in order to fulfill the annual plan, for the remaining four months until the end of 2024, tax revenues from oil production must equal revenues for the first eight months of the year. The unreality of such a scenario has already been assessed by the Ministry of National Economy of the Republic of Kazakhstan, which was reflected in a decrease in the forecast for oil revenues from 7.6 to 6.3 trillion tenge [in the forecast of social and economic development of the Republic of Kazakhstan](#) for 2025-2029 [stage 2]. In addition to the revised forecast from the Ministry, two objective unfavorable factors also indicate the improbability of a scenario with a significant increase in revenues in the second half of the year.

Firstly, revenues from oil production strongly depend on Brent quotations, the latest trends in the global energy market do not inspire optimism, at least in the near future. As we can see in the diagram below, the price of Brent reached its peak this year in early April, and since then there has been a downward trend. The main reason for the cautious sentiment in the energy market is the increase in the unemployment rate in the United States above the psychological mark of 4%, which may be a harbinger of recession in the world's largest economy. Analyst J.P. Morgan estimates the probability of a recession in the United States in 2025 [at 45%](#). In response to the rising unemployment rate, the Federal Reserve System [FRS] [recently announced a key rate cut](#) for the first time since 2020. In any case, the positive effect on the US economy from monetary policy easing will be delayed.

Brent Crude Oil Continuous Contract



Source: [marketwatch.com](https://www.marketwatch.com)

Secondly, OPEC is also adjusting its oil production plans to partially offset the expected drop in oil demand due to a slowdown in the growth of the world's largest economies. Kazakhstan, as a country that voluntarily joined OPEC+ format, is expected to fulfill its obligations to reduce oil production within the established quota. The factor of production decline is also unfavorable for the amount of tax revenues from the industry.

According to the analyzed companies, budget revenues for the first 8 months of 2024 amounted to 4.04 trillion tenge. Taking into account the rate of revenues and taking into account the above factors, the forecast of revenues from oil producing companies for the year may be at the level of 6 trillion tenge.

Expected changes in new Tax Code

Significant changes are expected in new Tax Code of Kazakhstan aimed at optimizing the tax burden on oil producing companies. One of the key changes will be the reduction of the export duty on crude oil and rent tax on export with the transfer of the tax burden to the mineral extraction tax. This change can be implemented within the next two years.

Reducing ECD and rent tax while increasing MET will allow oil prices to align with prices in the countries of the Eurasian Economic Union [EAEU], such as Russia and Kyrgyzstan. This change is aimed at preventing the export of oil and petroleum products abroad and eliminating the need to introduce artificial bans. Manufacturing companies will be able to benefit from higher prices in the domestic market, which will also lead to an increase in tax revenues to the budget and the National Fund. These additional funds can be used to compensate for the growing costs of socially vulnerable segments of the population associated with higher prices for petroleum products.

In addition, it is planned to systematize tax benefits for MET for mature and depleted deposits. Currently, companies are forced to individually negotiate a reduction in MET rates for such fields. The new approach involves the introduction of an alternative oil tax [AOT], which will be universally applied to all depleted fields. This will simplify tax administration and make it easier for companies with low-yield deposits, especially in Mangistau, Kyzylorda and Aktobe regions.

It is expected that these changes will be expressed in new Tax Code and will probably come into force in 2026. There is still time to make sure that the introduction of such measures will definitely increase the competitiveness of oil companies, increase the investment attractiveness of Kazakhstan's oil production and ensure the country's energy security.

The Bottom Line

Tax policy plays an important role not only as a source of replenishment of the republican budget, but also as a tool to stimulate investments in exploration and new technologies. This is especially important for maintaining or increasing production in mature and depleted fields, as well as for the development of fields with hard-to-recover reserves, such as shale oil and gas, bituminous oil. In order to attract new investors, it is necessary to create attractive conditions for investments in risky exploration projects, and it is important for existing subsurface users to maintain sufficient funds for reinvestment after taxes and fulfillment of obligations.

Although the instrument proposed to investors since the beginning of 2023 in the form of IMC for fields with hard-to-recover reserves is a positive step to increase the investment attractiveness of the oil and gas industry in Kazakhstan, S&P Global's E&P Attractiveness Ratings service assesses the potential for the IMC reform to attract large investments as limited. The preferences provided by IMC may not be sufficient against the background of more favorable conditions offered by other countries that successfully attract international investment in exploration and production.

Additional global factors, such as uncertainty in the demand for hydrocarbons in the long term, low investor interest in investing in this sector and the impact of the energy transition, force companies to carefully select projects. This is an important point that should be taken into account, since Kazakhstan considers IMC to be a solution for attracting investments, whereas S&P Global, whose opinion is guided by many investors, evaluates this approach differently. Perhaps we should reconsider this issue and find a more balanced solution that suits both sides.

To solve the accumulated problems in the oil industry of Kazakhstan, it is necessary to update the General Tax Regime in new Tax Code. It is also worth considering the possibility of using other forms of contracts, such as risk-service or stabilized contracts [including PSA], provided that national interests are preserved, conditions for society are transparent and reasonable guarantees of return on investment for investors are created.

ROUTE TO SELL – MARKETS AND NETBACKS

Kazakhstan’s oil industry faces a concentration of export routes and a lack of (real) alternatives for them. The launch of KEBCO, reducing the netback gap between domestic and export markets, and investments in transport infrastructure should help to mitigate concentration risks to ensure the country’s economic sustainability.

The article was first published on www.exia.kz on October 16, 2024

Introduction

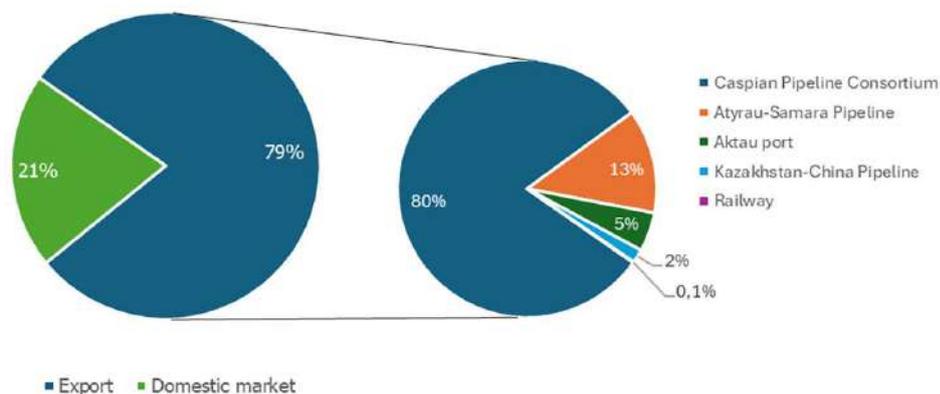
Oil is a crucial element in the [global energy landscape](#), and for Kazakhstan, it is the most valuable export. The majority of Kazakhstan’s crude oil is sent to international markets, making transportation routes and companies vital to the [country’s economy](#). Currently, Kazakhstan relies heavily on the Caspian Pipeline Consortium route, which handles almost 80% of its oil exports. This heavy reliance poses a risk, as any disruption could significantly impact on the economy. Therefore, diversifying export routes is essential for economic stability.

Transportation companies are key players in this scenario, not only moving millions of tons of oil each year but also serving as major taxpayers. This article explores the importance of Kazakhstan’s oil export routes, the current dependence on the CPC, and the need for diversification to ensure the country’s economic sustainability.

Oil distribution routes

According to data from the Analytical Platform EXia, in 2023, Kazakhstan exported approximately 79.4% of its oil and [stabilized] condensate production. The domestic market absorbed other 20.6% of the total oil production. In the first eight months of 2024, the distribution remained almost the same, with 79.5% allocated to exports and 20.5% to the domestic market. This indicates that Kazakhstan’s oil distribution routes are very stable and consistent.

Oil distribution in 2023

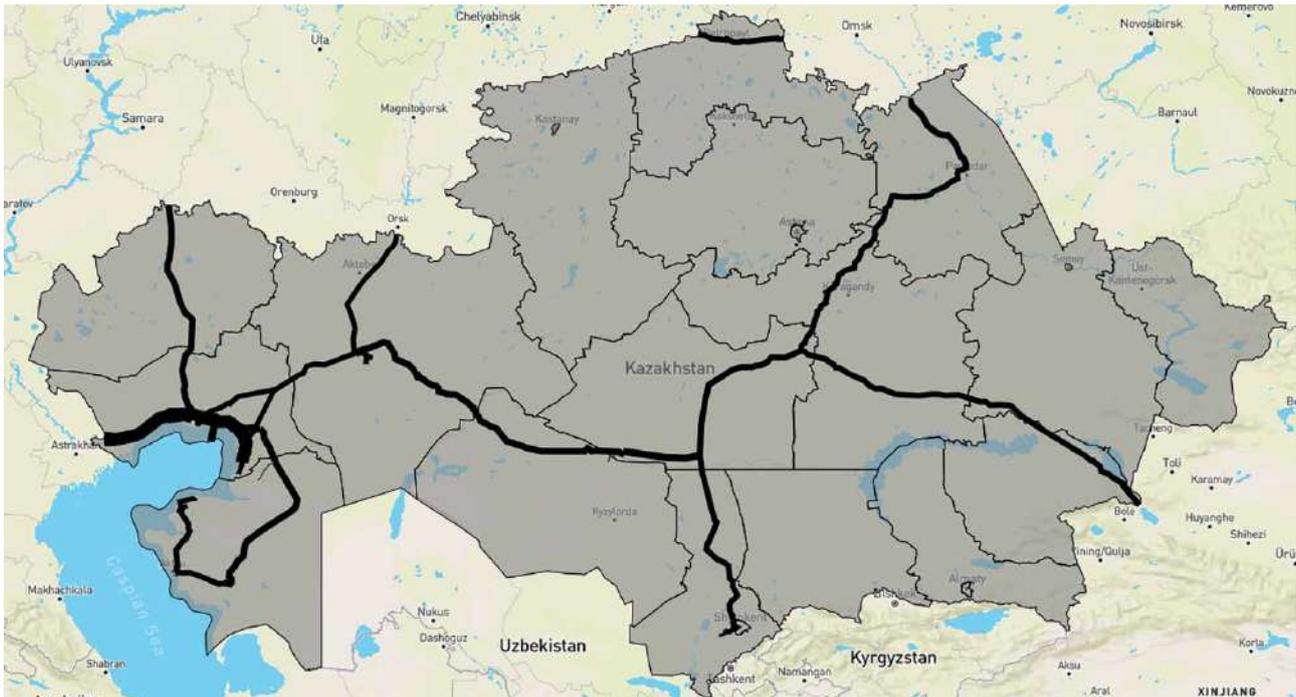


Source: Compiled by ENERGY Insight & Analytics

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Kazakhstan's oil distribution network is a complex system that plays a crucial role in the country's economy, given its landlocked geography and reliance on oil exports. According to the KAZENERGY National Energy Report 2023, the total annual capacity of Kazakhstan's overland pipeline crude oil export system is approximately 109.5 million metric tons [MMt], or 2.19 million barrels per day [b/d]. This capacity is distributed across several key routes, each with its own strategic importance and challenges.

Kazakhstan's oil pipelines



Source: Analytical Platform EXia

Caspian Pipeline Consortium [CPC] Route: The CPC is the most significant export route, with a capacity of 72.5 MMt [1.45 million b/d], which can be increased to 78 MMt [1.56 million b/d] with the use of drag-reducing agents. This pipeline terminates at the Black Sea terminal of Yuzhnaya Ozereyevka and handles the majority of Kazakhstan's oil exports.

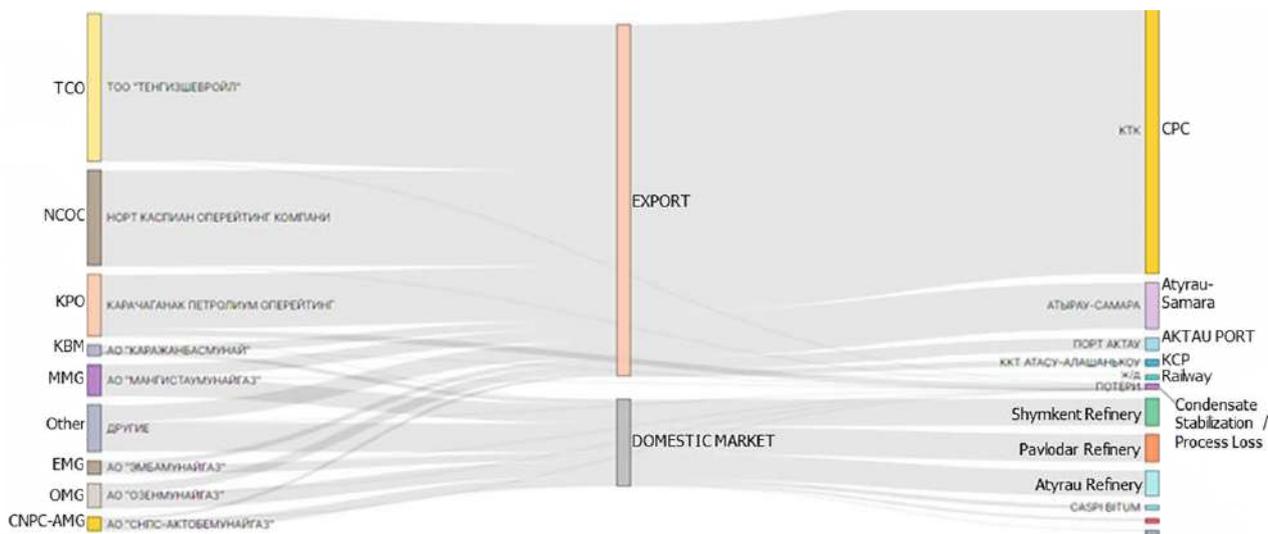
Atyrau-Samara Pipeline Network: This route has a capacity of 17.5 MMt [350,000 b/d] and is another critical channel for Kazakh oil exports. It connects to the Russian's Transneft pipeline system, providing access to European markets.

Kazakhstan-China Pipeline [KCP]: With a capacity of 20 MMt [400,000 b/d], the KCP is a strategic route for exports to Asia. Approximately half of this capacity is booked for Russian transit crude.

Rail Capacity: Kazakhstan also utilizes rail to export up to 3 MMt [60,000 b/d] of crude to neighboring Uzbekistan or to Russian ports on the Black or Baltic seas.

Baku-Tbilisi-Ceyhan [BTC] Pipeline via Aktau Port: Although the BTC pipeline has a nameplate capacity of 60 MMt [1.2 million b/d], it has been underutilized in recent years. To access this route, Kazakh crude must be shipped across the Caspian Sea, facing constraints such as tanker availability and bottlenecks at the Aktau Port.

Oil distribution by routes



Source: Analytical Platform EXia

During 2023, total exports comprised 70.5 MMt of oil. Since CPC pipeline represents the lion's share of the country's total transportation capacity, it is unsurprising that this route represented almost 80% [56.6 MMt of oil] out of the total annual export volume. Companies that are CPC's customers are the three giants of our oil industry: [Tengizchevroil](#) [TCO] contributed 49% of the total volume, North Caspian Operating Company [NCOC] accounted for 32%, and Karachaganak Petroleum Operating [KPO] made up 17%. Thus, we can conclude that the CPC route is predominantly used by these three companies, as their cumulative share comprised 98% of the pipeline's total volume in 2023. The remaining 2% were attributed to various companies, each representing an individually insignificant portion. The situation is approximately the same so far this year as these three giants cumulatively represented 96% of CPC's volumes during the first eight months of 2024.

Atyrau-Samara also was a crucial route in 2023 with 9 MMt [13% out of the total] exported via this pipeline. Major oil production companies using this pipeline are Karazhanbasmunai [KBM] and Mangistaumunaigas [MMG]. The remaining 6% of our country's oil export were transported through the Aktau Port [3.6%] and KCP [1.7%] pipelines.

As mentioned earlier, domestic crude oil sales accounted for 21% of the total volume in 2023. During the first eight months of 2024, the top three contributors to the domestic market were MMG, contributing 21% of the domestic supply, Ozenmunaigas [OMG] at 18%, and CNPC-Aktobemunaigas at 10%. The balance remains stable, as these top three contributors were the same in 2023, with slightly different shares: MMG at 20%, OMG at 17%, and CNPC-Aktobemunaigas at 11%.

In summary, there is a significant concentration risk associated with Kazakhstan's reliance on the CPC and Atyrau-Samara pipelines. Approximately 93% of the country's oil exports depend on these two routes, highlighting substantial vulnerabilities. While Russia has been a longstanding partner, sharing a deep historical connection and the world's longest continuous border with Kazakhstan, there is an undeniable «elephant in the room»: Russia's ongoing military conflict with Ukraine. Recent developments indicate that energy infrastructure within Russian territory has become a primary military target.

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Beyond the direct risks posed by the conflict, the CPC pipeline has encountered additional challenges in recent years. In March 2022, a storm inflicted physical damage on the pipeline, and during the summer, World War II-era mines were discovered in its vicinity. Furthermore, geopolitical risks associated with Russia, including economic sanctions, add layers of complexity to the situation.

Despite efforts to diversify export routes, such as the KCP, these initiatives appear insufficient to fully mitigate the high concentration risks associated with routes passing through Russia. This underscores the urgent need for Kazakhstan to explore and develop alternative pathways to ensure the resilience and sustainability of its oil export infrastructure. On the other hand, developing new crude oil export routes is not the only option. Additionally, creating economic value for our country could involve utilizing Kazakhstan's crude oil in more advanced processing than current refineries offer, producing higher-value petrochemicals rather than just transportation fuel.

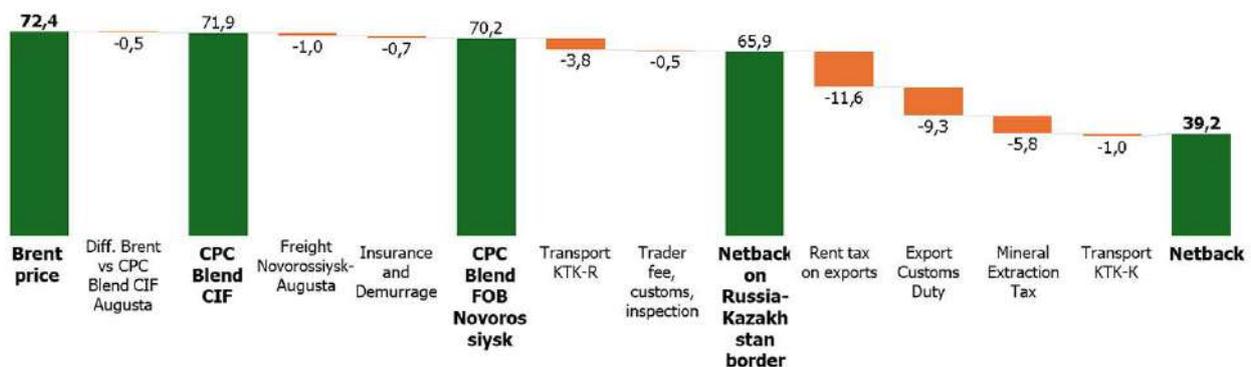
Netback

Netback is a crucial metric in the oil industry that measures the profitability of oil production by calculating the revenue remaining after deducting all costs associated with bringing oil to market. This includes production costs, transportation fees, royalties, and oil price linked taxes. The government's policies, including price controls for the domestic market and export regulations, have a profound impact on the netback calculations for oil companies operating within the country.

In the domestic market, the country's government implements price ceilings to ensure affordable energy for its citizens and local businesses. While this policy benefits consumers, it constrains the profitability of oil sales within the country. The regulated pricing structure limits the potential revenue for oil producers, resulting in lower netbacks for domestic sales.

Conversely, the export market offers more economically attractive opportunities for Kazakhstani oil producers. Despite facing higher taxes, duties, and transportation costs associated with international sales, the netback for exports remains notably higher than that of the domestic market. This discrepancy is primarily attributed to the ability to sell oil at global market prices, which are typically higher than the regulated domestic prices.

Netback – Export by CPC



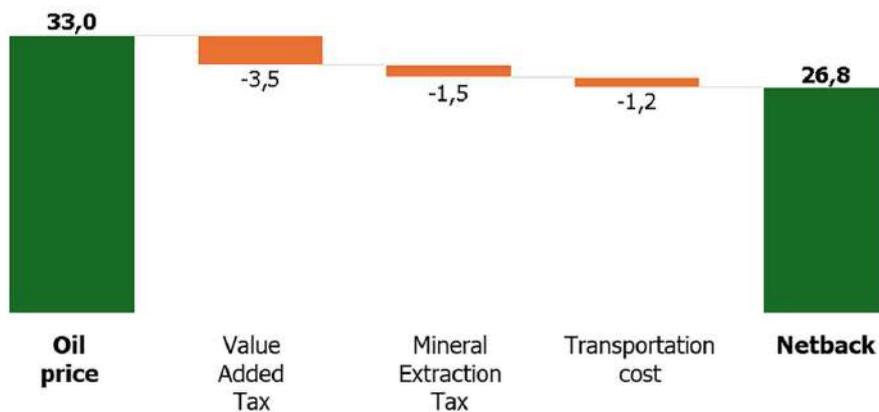
Source: Analytical Platform EXia

The current scenario, with Brent Crude Oil priced at \$72.4 per barrel as of the end of September 2024, illustrates this stark contrast. The above bar chart suggests that after accounting for transport costs and applicable taxes/duties, the export netback stands at \$39.2 per barrel. Notably, the CPC’s netback level is the highest among comparable [pipeline-based] Europe’s distribution routes, which makes it the most economically attractive for producers.

With the same \$72.4 Brent Crude Oil price per barrel, Atyrau-Samara delivers \$33.2 netback per barrel. This makes it the second most attractive route, but the gap with CPC looks significant as there is around 20% difference between these two routes. Ust-Luga holds the third spot in terms of economic attractiveness as it demonstrates a \$31.3 netback under the same Brent Crude Oil Price scenario.

Finally, let us emphasize the netback for domestic sales. The bar chart below demonstrates that the domestic market’s netback at \$26.8 per barrel is substantially lower than delivered by any export route. The gap per barrel between the netback of domestic sales and all three export routes is large and it represents a significant incentive for oil producers to prioritize exports over domestic sales.

Netback – Domestic market



Source: Analytical Platform EXia

This netback disparity has far-reaching implications for Kazakhstan’s oil industry and broader economy. It influences investment decisions, production strategies, and government policies. Oil companies operating in Kazakhstan are incentivized to maximize their export volumes to capitalize on the higher netbacks, potentially leading to supply constraints in the domestic market.

The government faces a delicate balancing act in managing this situation. On the one hand, higher export volumes contribute to increased tax revenues and foreign exchange earnings, bolstering the national economy. On the other hand, ensuring sufficient domestic supply at affordable prices is crucial for social stability and industrial development within Kazakhstan. Moreover, it’s important to recognize that our Kazakhstan’s downstream industry still has significant potential for development, particularly in petrochemicals. Expanding the capacity of producing petrochemicals will require more crude oil for the local market.

To address these challenges, the government of our country may consider implementing incentives that bridge the gap between domestic and export netbacks. This could involve gradual adjustments to domestic price ceilings, targeted subsidies for specific population strata, or incentives for oil producers to maintain a certain level of domestic supply.

KEBCO

KEBCO [Kazakhstan Export Blend Crude Oil] represents a strategic rebranding of Kazakh oil exports, prompted by shifting geopolitical dynamics in the global energy markets. This initiative aims to clearly differentiate Kazakh oil from Russian oil, particularly considering the sanctions imposed on Russian energy exports.

Before this rebranding, Kazakh oil exported through Russian ports was mixed with Russian oil and marketed as REBCO [Russian Export Blend Crude Oil], commonly known as Urals crude. The sanctions on Russian oil created significant challenges for Kazakh exports, despite Kazakhstan not being the target. The Urals crude blend faced substantial pricing pressures, trading at a significant discount to the Brent benchmark, which impacted Kazakh oil revenues until KEBCO introduction.

The launch of KEBCO in June 2022 coincided with the European Union's decision to cease imports of Russian seaborne oil by the end of the year. This timely rebranding is crucial for Kazakhstan's oil industry, as it ensures the country of origin is clearly identified in official documentation for international trade, such as opening letters of credit.

This rebranding is particularly important because Kazakhstan relies heavily on Russia-placed infrastructure for its oil exports, with 93% of its oil exports transiting through Russia in 2023. By establishing a distinct identity for its oil, Kazakhstan aims to maintain and potentially expand its market share in Europe, where buyers are actively seeking alternatives to Russian crude.

If KEBCO succeeds in the international market, it could have significant implications for Kazakhstan's economy, as oil exports are vital to the country's economic stability. Additionally, it could enhance Kazakhstan's standing in the global energy markets and potentially lead to more favorable pricing for KEBCO compared to alternative blends.

However, the path forward for KEBCO is not without challenges. The global oil markets remain volatile, influenced by geopolitical tensions, shifting demand patterns, and the ongoing transition towards renewable energy sources. Kazakhstan must navigate these complexities while managing its relationship with Russia, through whose territory the majority of its oil continues to flow. Another issue is the lack of liquidity and transparency in the formation of the KEBCO market quotation, while the actual prices for oil sales in the Atyrau-Samara direction differ significantly from the published KEBCO quotations.

KEBCO's success will depend on more than just branding; it will rely on the quality and consistency of the oil, the reliability of supply, and Kazakhstan's ability to forge strong relationships with international buyers. Investments in additional infrastructure and exploration of new export markets may be necessary to fully realize KEBCO's potential.

In conclusion, the introduction of KEBCO is a pivotal step in Kazakhstan's strategy for its oil sector. It reflects the nation's efforts to reposition itself in the international oil market amidst uncertain geopolitical times. As KEBCO becomes more integrated into the global energy trade, it has the potential to play a significant role in Kazakhstan's economic development, its partnerships with the international community, and its influence within the evolving landscape of global energy politics.

The Bottom Line

In conclusion, Kazakhstan's oil transportation industry experiences the moment of truth while facing a series of challenges and opportunities that will shape its future. The nation's heavy reliance on the CPC and Atyrau-Samara pipelines presents a significant concentration risk, particularly in the context of geopolitical instability with Russia. The ongoing crisis in Ukraine and the associated risks to energy infrastructure make it especially urgent for Kazakhstan to expand its export route options. This diversification is not only strategic but essential for achieving economic stability and resilience in the face of potential adversities.

With the launch of KEBCO, Kazakhstan is making a significant shift in its approach to the international oil market. By rebranding its oil exports to distinguish them from Russian oil, Kazakhstan aims to protect its market share from the impact of sanctions on Russian energy exports. This move is crucial for maintaining Kazakhstan's market presence, particularly in Europe, where demand for non-Russian oil is increasing. The success of KEBCO will depend on Kazakhstan's ability to consistently deliver high-quality oil and maintain strong relationships with international customers.

However, the road ahead is challenging. Global oil markets are volatile due to geopolitical factors, fluctuating demand, and the ongoing transition to renewable energy sources. Kazakhstan must navigate these complexities while managing its relationship with Russia, through whose territory the majority of its oil exports still flow. Investment in new infrastructure, including trading the Kazakhstan's oil and derivatives on own soil, and the pursuit of new export opportunities will be necessary to fully capitalize on KEBCO's potential and reduce reliance on existing pipelines.

Additionally, the netback gap between domestic and export markets remains a critical issue for the Kazakhstani government. While higher export prices boost tax revenues and foreign exchange inflows, affordable domestic energy is vital for social stability and industrial development. Implementing incentives to balance domestic and export netbacks, such as adjusting price ceilings or providing targeted subsidies, could help address these challenges.

ENERGY Insight & Analytics was established with the aim of becoming a leading source of data, analysis, and recommendations on Kazakhstan's oil, gas, and electric power industries, as well as the broader Caspian region. This will provide decision-makers with tools to analyze and forecast key industry indicators based on input from the sector's most significant players. ENERGY Insights & Analytics is Kazakhstan's premier think tank for the energy industry, producing high-quality, in-demand intellectual products based on its proprietary industry database and analytical tools.

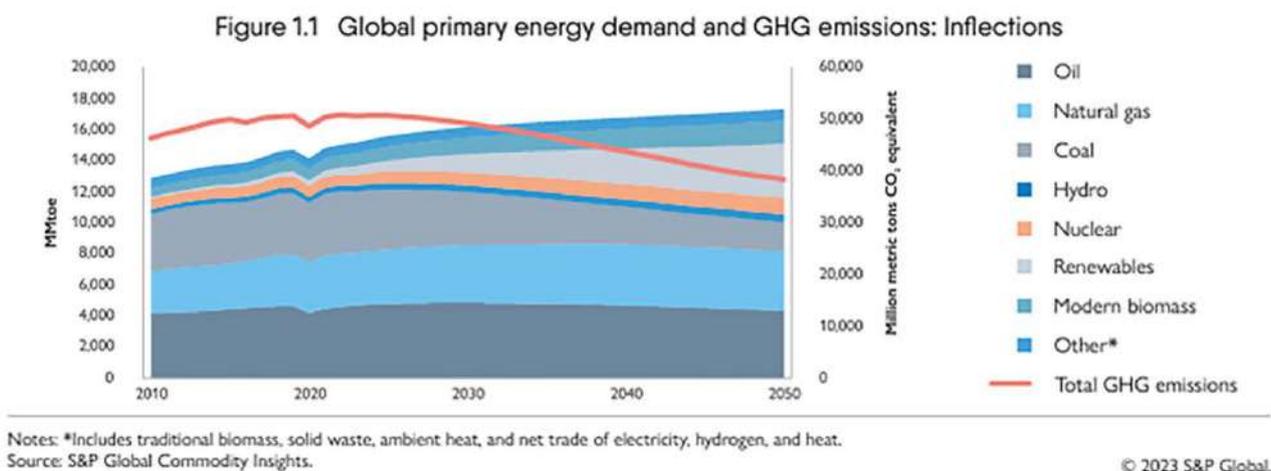
Activities of ENERGY Insight & Analytics incorporate the whole analytics cycle with consequent stages: Descriptive, Diagnostic, Predictive, and Prescriptive analytics.

Part 3. STRATEGIST'S TOOLKIT: CRUDE OIL MARKETS – TRENDS AND FORECASTS

Crude oil remains a vital component of global energy security, even as renewable energy sources steadily gain ground. The oil market is shaped by a complex web of geopolitical events, economic policies, and technological advancements, all of which demand careful navigation by strategists and policymakers. The article was first published on www.exia.kz on October 28, 2024

Introduction

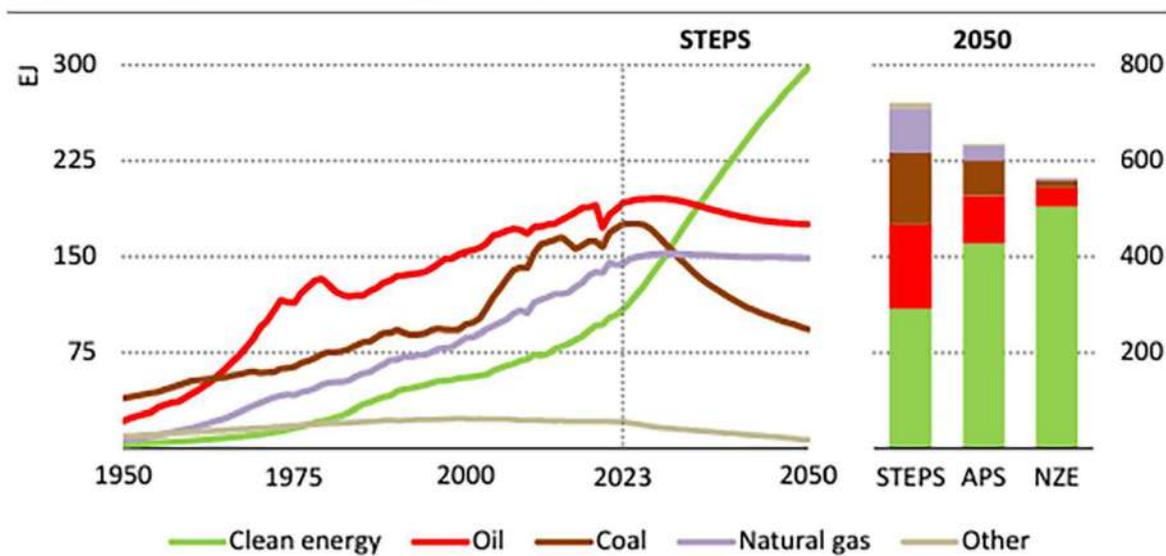
As we mentioned in our article «[Crude Oil - Upward Trend](#)», crude oil is still the cornerstone of the global energy security, underpinning the stability and growth of economies worldwide. Despite a steady growth in renewable energy, oil remains the primary source of energy. The chart below shows a significant gap between traditional and cleaner energy sources, underscoring oil's ongoing importance.



Source: [KAZENERGY National Energy Report 2023](#)

The chart above is perspective of S&P Global published in the KAZENERGY National Energy Report 2023, while the International Energy Agency [IEA] has recently released its World Energy Outlook 2024, where another reputable source supporting the assertion of the vitality of oil and gas for the global energy mix over the next few decades. According to the IEA, oil and gas are expected to remain vital components of the global energy mix by 2050, where the demand for natural gas is remaining steady and demand for oil decreasing very slowly after another «peak» in coming years.

Figure 1.1 ▶ Global energy mix by scenario to 2050



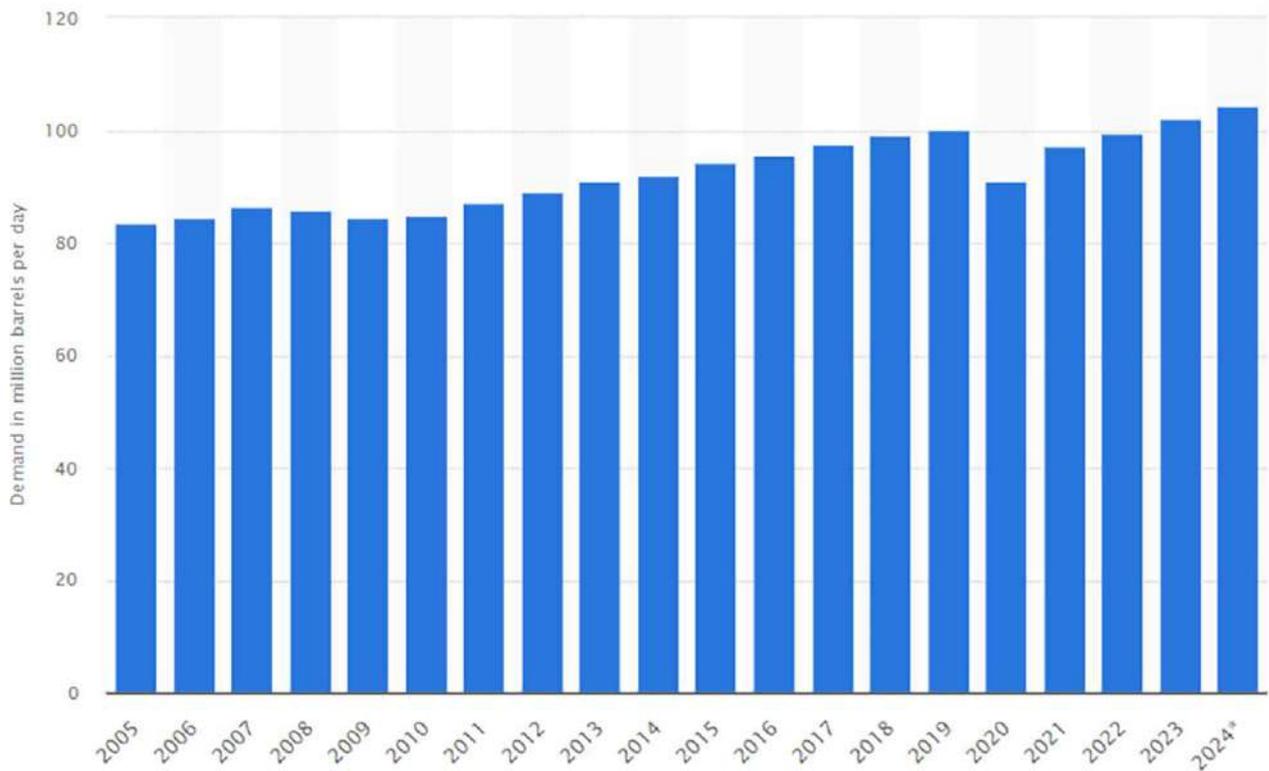
Source: IEA

The current landscape is shaped by significant geopolitical events, including heightened tensions in the Middle East and implications of 2024 U.S. presidential election, both of which have profound implications for global oil markets. Additionally, China’s recent fiscal stimulus measures aimed at bolstering its economy further underscore the interconnectedness of global economic policies and energy dynamics. This article immerses into these critical factors, providing strategists and policymakers with the insights needed to navigate the complexities of the oil market and its impact on the global economy. By examining production and sales trends, price fluctuations, and future forecasts, we aim to equip our readers with the tools necessary to make informed decisions in an increasingly volatile world.

Recent trends in Crude oil Supply & Demand, and Pricing

Commodity prices are heavily influenced by the global supply-demand equilibrium. Since 2020, the global oil market has experienced several significant shocks. The onset of the COVID-19 pandemic and the unprecedented global lockdown in the spring of 2020 led to a dramatic crash in oil prices due to a sharp decline in demand. As illustrated in the bar chart below, global oil demand plummeted from approximately 100 million barrels per day [MMbpd] in 2019 to around 91 MMbpd in 2020. The chart also shows that global oil demand only surpassed pre-pandemic levels in 2023, indicating it took three years for demand to return to its steady growth trajectory. For 2024, Statista projects global oil demand to reach 104.46 MMbpd, representing a 2.2% increase compared to 2023.

Part 3. Strategist's Toolkit: Crude Oil Markets – Trends and Forecasts

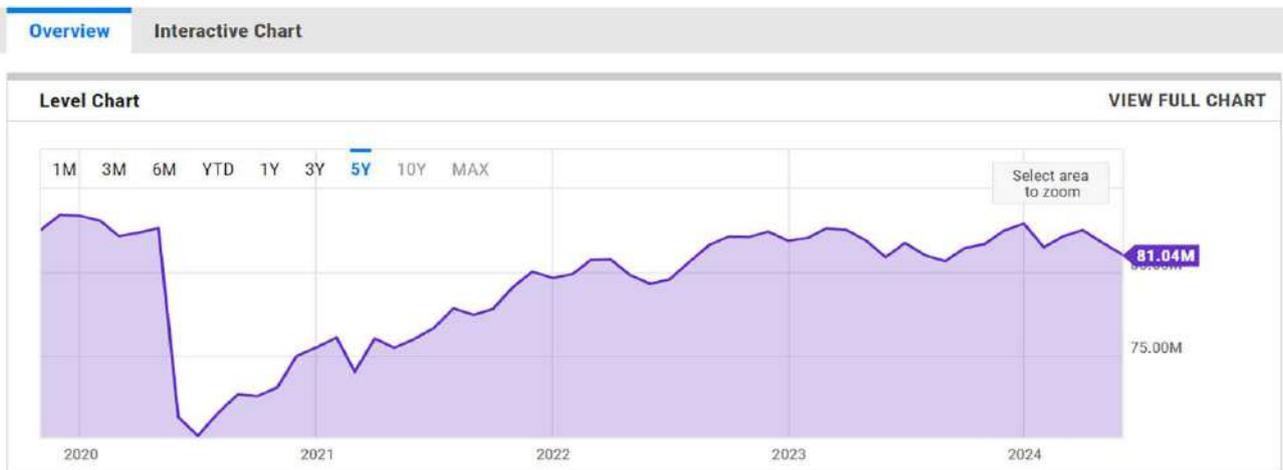


Source: Statista

On the other hand, the global lockdown together with disrupted supply chains has also significantly hit global oil production. As we see below, the world crude oil production bottomed in the first half of 2020, and it still has not recovered to pre-pandemic levels of late 2019.

World Crude Oil Production (I:WCOP)

81.04M bbl/d for May 2024



Source: YCharts

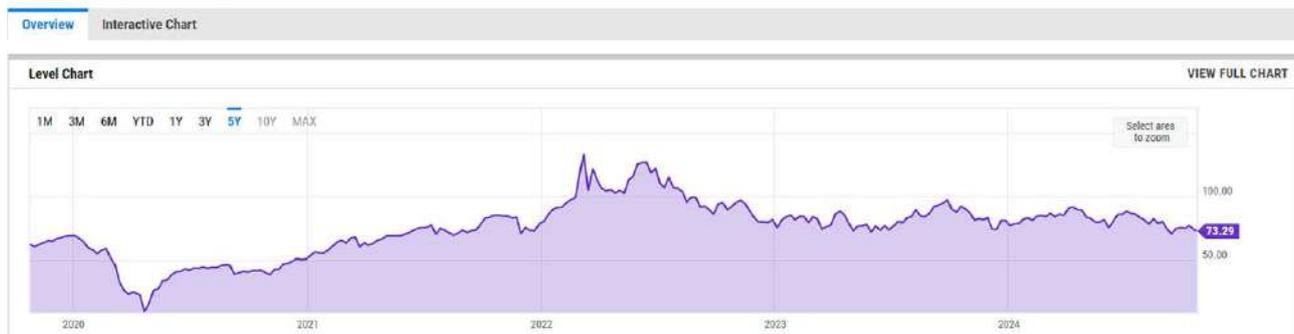
The significant disruption caused by the global lockdown led to a steep decline in crude oil prices due to widespread uncertainty about the duration of restrictions on international travel and quarantine measures within countries. Consequently, crude oil prices recovered to pre-pandemic levels by mid-2021, as widespread COVID-19 vaccination efforts enabled countries to begin easing quarantine measures.

In early 2022, oil prices spiked significantly following the outbreak of direct military conflict between Russia and Ukraine. This surge was driven by fears of Western sanctions on Russian oil – a major component of the global energy supply – which were indeed imposed later that year. The rally in oil prices was further supported by high expectations for China’s economic reopening after strict COVID-19 restrictions.

However, as markets realized that China’s economic recovery was slower than anticipated, and due to the adaptability of global energy transfer routes that allowed developed countries to replace Russian oil and gas with alternative sources, oil prices began to stabilize.

Brent Crude Oil Spot Price (I:BCOSPNK)

73.29 USD/bbl for Oct 21 2024



Source: YCharts

As the world’s largest oil consumer, the United States does not benefit from high oil prices and has taken several robust steps to bring them under control. The U.S. Federal Reserve’s aggressive monetary policy tightening, resulting in the highest interest rates since the Great Recession, has been a significant factor in controlling oil prices. Additionally, the Biden administration has aggressively depleted the U.S. Strategic Petroleum Reserve.

Beyond the U.S., other developed economies, including Canada, the European Union, and the United Kingdom, have also pursued aggressive monetary policy tightening. These combined efforts have contributed to the stabilization of crude oil prices by the end of 2022 and continue to do so today.

Crude oil Supply & Demand, and Price Forecasts

As discussed in the previous section of our article, the price of Brent crude oil is highly sensitive to fluctuations in global demand and supply. Given the inherent unpredictability of these factors, it is prudent to consult multiple reputable sources that project global demand. Demand is less dependent on political and geopolitical factors, as individuals and businesses require energy regardless of political circumstances. In contrast, supply is more influenced by political and geopolitical decisions made by a limited group of key leaders. For instance, OPEC

Part 3. Strategist's Toolkit: Crude Oil Markets – Trends and Forecasts

and OPEC+ leaders regulate production levels, while leaders of developed countries impose sanctions and navigate other geopolitical issues. By focusing on demand projections, we can gain valuable insights into the future direction of oil prices.

Reputable sources expect growth in oil demand next year. For example, the U.S. Energy Information Administration [EIA] [expects](#) the global consumption of liquid fuels will increase by 900,000 bpd in 2024 and 1.3 million bpd in 2025. OPEC is more optimistic as [the organization expects](#) 2025 global oil demand to grow by 1.74 million bpd. As a result of a growing demand for oil, we can expect that sharp drawdowns in crude oil prices from current levels is highly unlikely. On the other hand, spikes in crude oil prices are also unlikely as the total oil supply is expected to be higher than demand in 2025, according to the below chart.

Table 4: Global oil supply and demand balance, 2025F

mbd	2025F												2025F				2025F
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	1Q	2Q	3Q	4Q	2025F
Total Oil Demand	101.1	103.6	102.6	102.1	104.0	105.3	104.5	105.3	104.0	103.9	104.5	104.6	102.4	103.8	104.6	104.3	103.8
Total Oil Supply	104.1	104.5	104.4	104.4	104.9	105.2	105.9	105.8	105.8	106.2	106.5	106.2	104.4	104.8	105.8	106.3	105.3
OPEC Crude	29.0	29.1	29.1	29.0	29.0	29.2	29.1	29.1	29.1	29.0	28.9	29.0	29.1	29.1	29.1	29.0	29.1
OPEC Other Liquids	6.1	6.3	6.1	6.2	6.2	6.2	6.2	6.2	6.3	6.2	6.3	6.2	6.2	6.2	6.2	6.2	6.2
Non-OPEC Crude + Other	66.7	66.9	66.9	66.9	67.4	67.5	68.2	68.1	68.1	68.6	69.0	68.7	66.8	67.2	68.1	68.7	67.7
Processing Gain	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.4	2.4	2.3	2.3	2.4	2.4	2.3

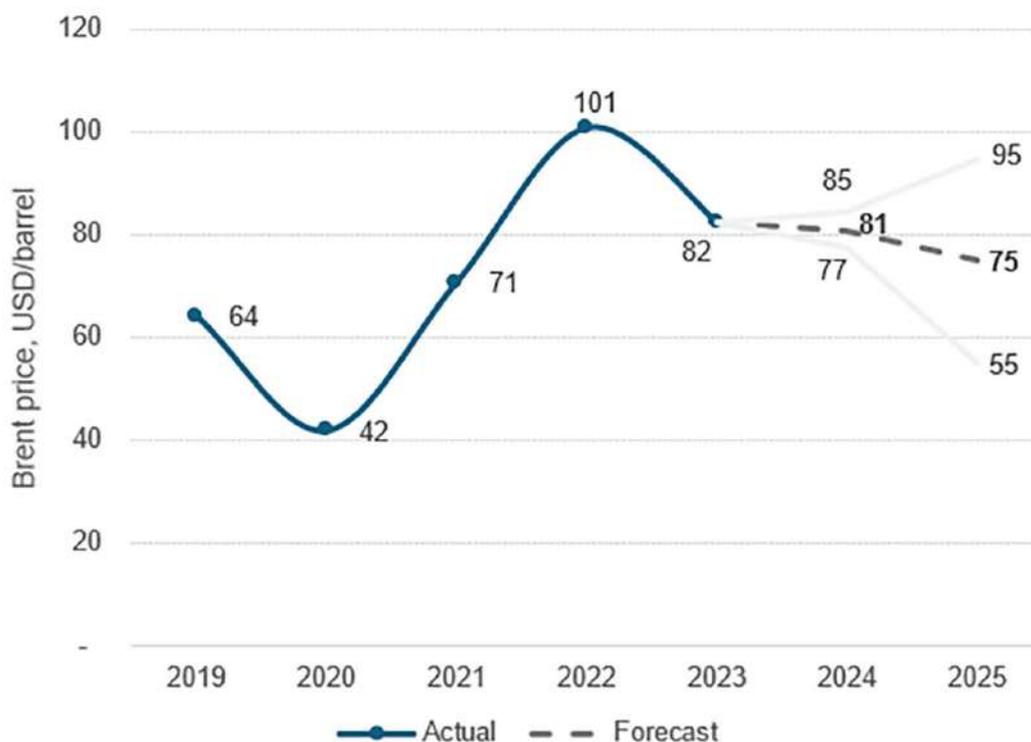
Source: J.P. Morgan

On the other hand, it is important to remember that the demand depends on the health of the global economy, which in turn significantly depends on the world's two largest economies: the U.S. and China. From this perspective, trends might be slightly warning as the OECD [has recently downgraded](#) its 2025 growth projection for the U.S. economy from 1.8% to 1.6%. Prominent Wall Street analysts like Goldman Sachs and Citigroup has also [recently trimmed growth forecast](#) for the economy of China in 2025 from 4.8%-4.9% to 4.7%. The less optimistic outlook on the U.S. and China's economy growth in 2025 has led to downgrades in Brent crude oil forecasts from EIA, which we can see below.

Notable Forecast Changes	2024	2025
Brent crude oil spot price (dollars per barrel)	\$81	\$78
Previous forecast	\$83	\$84
Percentage change	-2.3%	-7.7%

Source: eia.gov

The chart below illustrates a consensus forecast for Brent average crude oil prices, derived from 11 reputable sources. This analysis provides a comprehensive view of expected price trends, incorporating both historical data and future projections. The consensus forecast for 2024 is \$81, with a standard deviation of 1.18, indicating a relatively narrow range of predictions. For 2025, the forecast is \$75, with a wider standard deviation of 6.55, reflecting greater uncertainty. The ± 3 sigma range highlights potential volatility, underscoring the importance of considering multiple scenarios in strategic planning.



Source: Compiled by ENERGY Insight & Analytics based on consensus

To conclude, forecasts indicate a slight decline in Brent crude oil prices in 2025. Several key factors are expected to significantly impact the global oil demand and supply equilibrium, directly affecting crude oil prices. These factors will be explored in depth in the next part of our analysis.

Factors affecting Crude oil Supply & Demand

First, let's begin with the demand side of the equation. As mentioned earlier, upward trends in demand are less susceptible to political and geopolitical factors because the natural growth in energy needs is driven by the increasing global population. However, the extent of demand growth is influenced by the monetary policies of central banks in the world's largest economies.

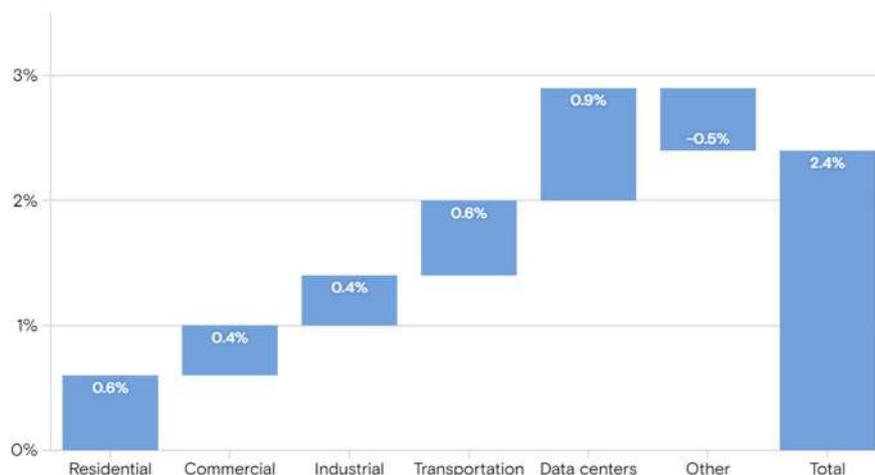
For example, interest rates in the U.S. reached multidecade highs, and the Fed only recently pivoted to monetary easing with a 50-basis point rate cut. Nevertheless, monetary policy remains quite restrictive, as Federal Funds rates are still above 4%. This is certainly a factor that weighs on oil demand growth. The Fed plans to continue cutting rates through 2025 as the U.S. inflation approaches the historical average of 2%. The broader U.S. stock market looks optimistic meaning that it views further monetary easing as the most likely scenario, but the Fed's «Dual Mandate» [pursuing maximum employment and price stability] suggests that the reality will depend on inflation stability. There might be shocks to the global oil supply, which we will discuss later, and if energy prices in the U.S. start soaring as they did in 2022, the Fed might reconsider its plans regarding interest rates.

Part 3. Strategist's Toolkit: Crude Oil Markets – Trends and Forecasts

China's economy, the second largest in the world, is still growing at a CAGR of nearly 5%. This drives up energy demand, but oil prices significantly depend on the pace of demand growth. After decades of rapid economic expansion, analysts are cautious about China's prospects. There are several solid fundamental reasons for this caution: a [rapidly ageing population](#), a sky-high unemployment rate [among young people](#), which results in [fewer marriages](#) and a [rapidly declining birth rate](#). Consequently, there is an almost paradoxical situation where a country with a population of 1.4 billion experiences a massive [oversupply of apartments](#). The Chinese government recently announced a [stimulus package](#) that primarily focuses on providing more favorable mortgage terms to households, which might temporarily alleviate the oversupply problem. However, less stringent mortgage policies could lead to higher non-performing loan ratios, and the demographic issue is too deep to be resolved by mortgage stimulus alone. Therefore, a sudden growth spike in the Chinese economy is unlikely.

The sectoral growth in US power demand

The demand for electricity is forecast to rise at 2.4% CAGR between 2022-2030



Source: Goldman Sachs

On the other hand, there is a powerful secular trend known as the 'digital revolution,' which requires a substantial amount of energy. Almost every week, we see news that Microsoft, Google, or Amazon has invested billions in building new data centers worldwide. According to the above chart, Goldman Sachs analysts expect data centers to be the main contributor to energy demand growth in the U.S. by 2030. This trend is strong, and it's important to note that U.S. technological giants appear largely unaffected by the tight monetary policy of recent years. This is because these companies have accumulated significant cash reserves. The three aforementioned tech giants have amassed a total of \$265 billion in cash as of the latest reportable date, and their leverage is quite low.

Now, let's proceed with the supply side of the equation. As a prominent player in the global oil market, OPEC can significantly influence supply by adjusting output levels. OPEC members are heavily dependent on oil exports, which means they have an interest in maintaining higher prices. Consequently, in recent years, we have seen several instances where OPEC responded to monetary tightening in the U.S. by implementing output cuts, which helped mitigate the impact of tight monetary conditions. Thus, OPEC remains an important factor in the global supply. It is also important to note that OPEC's influence has grown in recent years with the establishment

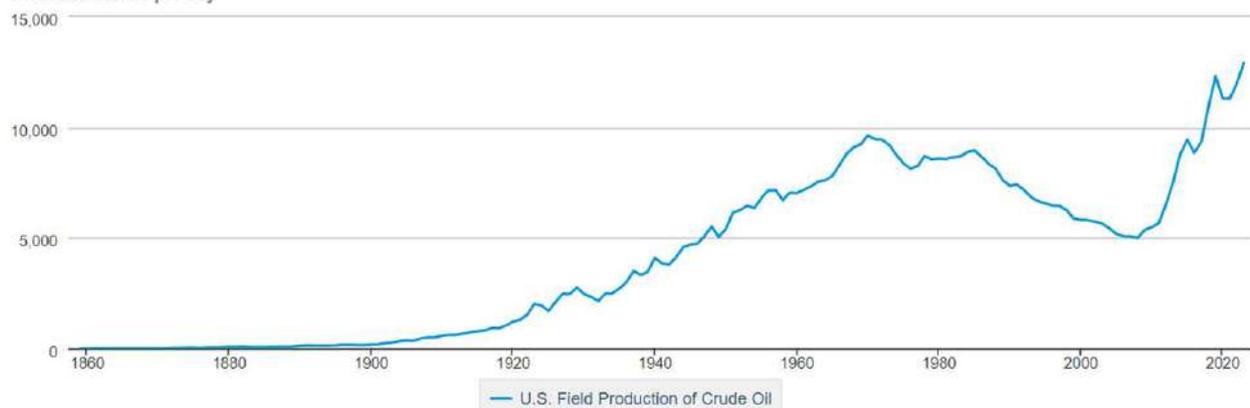
of «OPEC+,» an alliance between OPEC and several other major oil-producing countries. As a prominent player in the global oil supply, Kazakhstan is part of the OPEC+ format, which means our country has commitments regarding crude oil production quotas.

Another crucial, yet less common, factor on the supply side is the two ongoing major military conflicts involving oil-rich countries like Russia and Iran. As mentioned earlier, the global oil market has already adapted to the sanctions imposed on Russian oil, and this factor does not appear to significantly affect oil prices at the moment. However, the situation between Israel and Iran is escalating rapidly, with some opinions saying that Iranian oil facilities [might be attacked](#). The probability of such a scenario is extremely low, as Israel's Prime Minister claims the country only [plans to target Iran's military infrastructure](#). Nonetheless, this risk cannot be ignored because the geopolitical landscape in the Middle East is evolving rapidly, and the impact of such a scenario on crude oil prices could be substantial potentially leading to panic in oil markets and driving prices much higher, similar to what occurred in March 2022.

U.S. Field Production of Crude Oil

Thousand Barrels per Day

DOWNLOAD



Source: eia.gov

Last but not least on the supply side, we should not forget that the technological revolution in the industry, such as shale oil and fracking, was one of the core reasons why oil prices began to plunge ten years ago, with the bottom for Brent oil prices being quite deep compared to today's levels. From the above chart, we see that U.S. oil production grew by around 50% between 2015 and 2023, making the country the world's largest oil producer and independent of oil imports. As the largest U.S. oil and oilfield services companies continue investing billions in R&D, there is always the possibility of a new technological disruption that could significantly impact the supply side of the global equilibrium.

Break-evens for Crude oil-exporting Countries

The fiscal break-even oil price is a crucial metric for oil-exporting countries, representing the oil price needed to balance the national budget. It reflects the (in)dependency of a country's fiscal health on oil revenues. The below table from the International Monetary Fund [IMF] suggests that, for Kazakhstan, this break-even price is significantly higher than current and projected Brent crude oil prices, posing challenges to economic stability. It is also worth emphasizing that Kazakhstan's fiscal break-even price is among the highest ones compared with peers.

Part 3. Strategist's Toolkit: Crude Oil Markets – Trends and Forecasts

This issue has been recognized at the highest levels of government and is addressed in the [National Development Plan of Kazakhstan until 2029](#). The plan highlights concerns such as the increased debt-to-GDP ratio over the last decade and chronic non-oil budget deficit, which underscores the urgency of implementing effective strategies.

Table 6. Breakeven Oil Prices

(U.S. dollars per barrel)

	Average				Projections	
	2000–2019	2020	2021	2022	2023	2024
FISCAL BREAKEVEN OIL PRICE¹						
Oil exporters						
Algeria	102.1	89.6	111.4	109.8	93.8	125.7
Azerbaijan	51.9	65.7	57.5	67.3	76.4	88.2
Bahrain	83.2	120.6	131.6	131.8	138.4	125.7
Iran	85.6	228.0	118.8	131.4	105.1	121.0
Iraq	71.7	57.1	54.2	68.5	80.4	93.8
Kazakhstan	...	192.1	183.5	95.3	109.3	123.5
Kuwait ²	...	64.2	87.6	81.5	81.0	83.5
Libya	71.7	141.7	52.2	64.4	65.9	66.0
Oman	69.1	86.4	76.7	55.4	57.2	58.1
Qatar	45.1	49.3	47.7	46.3	46.5	43.1
Saudi Arabia	80.4	76.3	83.6	88.1	93.3	96.2
Turkmenistan	...	38.2	28.9	31.5	34.2	35.8
United Arab Emirates	50.0	51.7	53.0	46.6	51.6	56.7

Source: IMF

To address this, Kazakhstan should enhance budgetary efficiency by implementing stringent cost control measures and reducing expenditures that do not drive economic growth. Prioritizing spending on essential sectors that drive economic growth, and social welfare is vital to ensure effective resource allocation. Increasing the efficiency of governmental spending is also crucial. Streamlining government operations through public sector reforms can improve efficiency and reduce costs. Adopting digital solutions can enhance service delivery and reduce bureaucratic overhead. Introducing performance-based budgeting can ensure that government spending achieves desired outcomes, maximizing the impact of each tenge spent.

Diversifying the economic base is another key strategy. Encouraging investment in non-oil sectors (but not at the expense of the investment attractiveness of the Kazakhstan's oil and gas industry) such as technology, agriculture, and renewable energy can reduce dependency on oil revenues and provide alternative revenue streams. Supporting small and medium-sized enterprises can stimulate innovation and job creation, contributing to a more balanced economic structure.

While adoption of the new National Development Plan of Kazakhstan is a positive step, it is vital to execute it effectively. Without proper implementation, it risks remaining just a plan, and the problems will continue to mount. By taking decisive action, Kazakhstan can better navigate the challenges posed by high fiscal break-even oil prices and work towards a more sustainable and diversified economic future.

The Bottom Line

In wrapping up our analysis, it's clear that crude oil remains a vital component of global energy security, even as renewable energy sources steadily gain ground. The oil market is shaped by a complex web of geopolitical events, economic policies, and technological advancements, all of which demand careful navigation by strategists and policymakers. Understanding these dynamics is crucial, as they directly impact supply and demand, influencing oil prices and economic stability. By drawing on insights from trusted sources and acknowledging the potential for price volatility, stakeholders can make informed decisions to manage risks and seize opportunities in this ever-evolving global landscape.

The key tool and product of ENERGY Insight & Analytics is internally developed software - the Analytical Platform EXia, aimed to identify, localize, format, and present data most efficiently for the specified use cases.

Part 4. INVESTMENT POTENTIAL OF THE REPUBLIC OF KAZAKHSTAN

There are approximately a hundred oil-producing companies in Kazakhstan, each with its own characteristics and development potential. ENERGY Insights & Analytics has analyzed and compared the actual performance of the largest oil-producing companies and assessed their investment potential using NPV, a key metric that indicates «how much money is in the industry.» We plan to monitor changes in investment potential annually and track the factors influencing these changes.

Introduction

For this analysis, investment potential is understood as an oil-producing company's and its shareholders' ability to invest in sustaining the company's operations and future development.

In our view, the best measure of investment potential is Net Present Value (NPV), which represents the sum of discounted net cash flows. Net cash flows account for taxes, mandatory payments, and investments. The discount rate, in turn, incorporates the cost of equity and debt financing. Thus, NPV reflects the amount of capital shareholders can allocate to new projects, including those in the oil and gas industry. Consequently, the higher the positive NPV, the greater the investment potential.

High investment potential converts to high investment attractiveness, as capital owners are more inclined to invest in a particular enterprise or industry.

Using a bottom-up approach, the NPV is calculated for Kazakhstan's fifteen largest oil and gas companies (refer to the «Selection of Companies for Analysis» section below). Given the high concentration of oil production (92% in 2023) among these companies, the aggregate NPV of these firms can be considered representative of the investment potential for Kazakhstan's entire upstream oil industry.

Sources of Information

Benchmarking indicators and investment potential are calculated using publicly available information, including annual reports from the companies and related organizations, audited individual financial statements (from the web portal of the Depository of Financial Statements for Public Interest Organizations of Kazakhstan), data from official company websites, and financial and economic models of megaprojects developed by ENERGY Insights & Analytics for the Tengiz, Kashagan, and Karachaganak oilfields.

Selection of Companies for Analysis

The scope of the Analytical Platform EXia, the primary tool used for this analysis, includes 50 of Kazakhstan's 92 oil-producing companies (those with any production volume), representing 97% of the country's total oil output in 2023⁴. For simplicity and clarity, the analysis focuses

³ Hereinafter, oil means oil and gas condensate

on the 15 largest companies by oil production in 2023, which account for 92% of the total output. The branches of Buzachi Operating Ltd and Dunga Operating GmbH, with production levels 2023 of 1.04 and 0.55 million tons (1.2% и 0.6% of Kazakhstan's total oil production in 2023) accordingly, are excluded, as their operations are governed by production sharing agreements, meaning their financial and economic data is not publicly available⁵. ENERGY Insights & Analytics plans the development of financial & economic models for these companies soon.

Thus, ENERGY Insights & Analytics analyzed the financial and production performance of the following 15 oil and gas companies for 2022-2023:

Company's name	Reference name	Oil production, million ton	
		2023	2022
Tengizshevroil LLP	TCO	28.89	29.18
North Caspian Operating Company B.V.	NCOC	18.77	12.68
Karachaganak Petroleum Operating B.V.	KPO	12.06	11.26
Mangistaumunaigas JSC	MMG	6.15	6.10
Ozenmunaigas JSC	OMG	4.88	5.10
Embamunaigas JSC	EMG	2.72	2.58
CNPC-Aktobemunaigas JSC	CNPC-AMG	2.68	2.86
Karazhanbasmunai JSC	KBM	2.05	2.14
JV Kazgermunai LLP	KGM	1.19	1.30
Caspi Neft JSC	KN	0.90	0.92
PetroKazakhstan Kumkol Resources JSC	PKKR	0.55	0.58
Kazakhoil Aktobe LLP	KOA	0.51	0.56
KoZhaN LLP	KOZHAN	0.49	0.55
Kazakhturkmunai LLP	KTM	0.44	0.44
KMK Munai JSC	KMK-M	0.38	0.39
Other companies - in AP EXia scope	Others - EXia scope	0.58	0.59
Other companies - not in AP EXia scope	Others - non-EXia scope	6.73	7.01
Total oil production		89.97	84.24
Average value		0.03	0.03
Median value		0.01	0.01
Number of companies		92	89
Share of TOP-15		92%	91%

Source: compiled by ENERGY Insight & Analytics

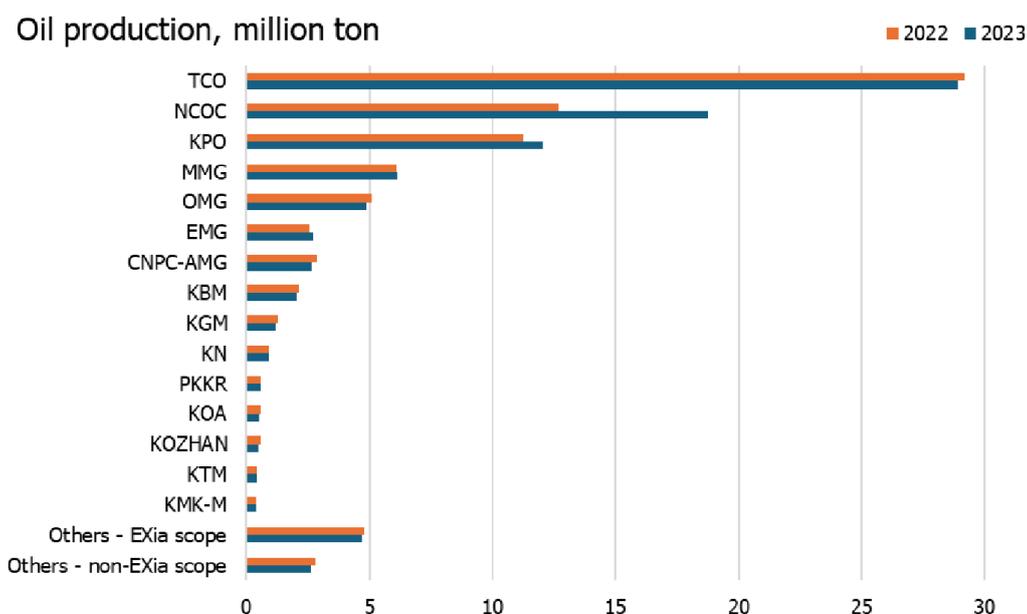
The number of oil-producing companies with active production rose from 89 in 2022 to 92 in 2023. Production remains highly concentrated, with the top 15 out of 92 companies accounting for 92% of total output in 2023, a 1% increase from 2022. In 2023, the average annual production per company was 0.98 million tons (up from 0.95 million tons in 2022), while the median production was 75 thousand tons (compared to 65 thousand tons in 2022).

⁵ A Production Sharing Agreement is not a subsoil use contract, as a result, the company is not a public interest organization, and therefore is not obliged to provide information to the Depository of Financial Statements of the Ministry of Finance of the Republic of Kazakhstan

Part 4. Investment potential of the Republic of Kazakhstan

Benchmarking

It is crucial to understand the dynamics of the key indicators of the companies being analyzed to assess investment potential. Aside from oil production, these indicators are presented on a per-ton-of-oil-produced basis to highlight each company's efficiency, independent of its production scale. At the same time, for clarity, the charts maintain the sorting of companies in order of decreasing production levels.



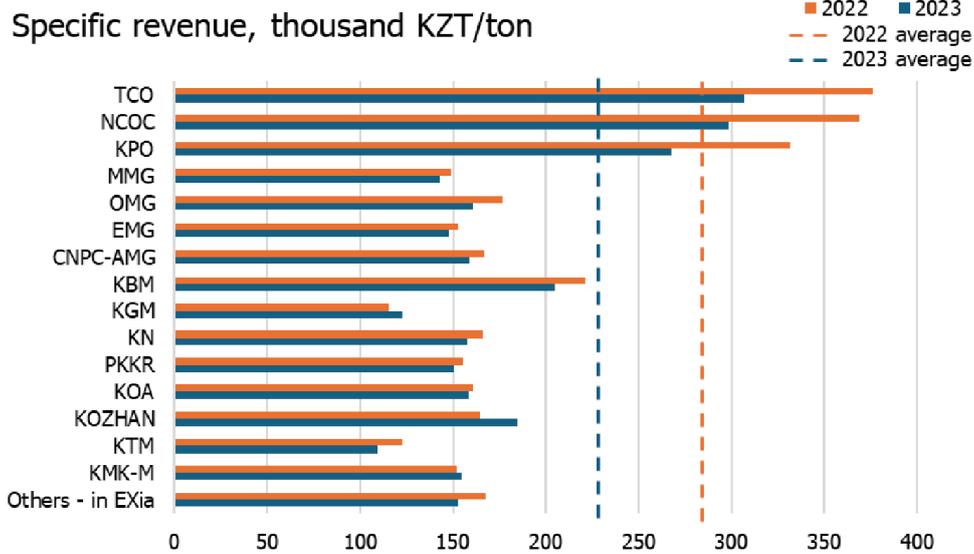
Source: compiled by ENERGY Insight & Analytics

Regarding oil production, TCO leads with 28.9 million tons in 2023. Overall, the megaprojects - TCO, NCOC, and KPO - account for 66% of Kazakhstan's production (up from 63% in 2022).

The following key macro indicators should be considered to understand the significance of assessed specific values:

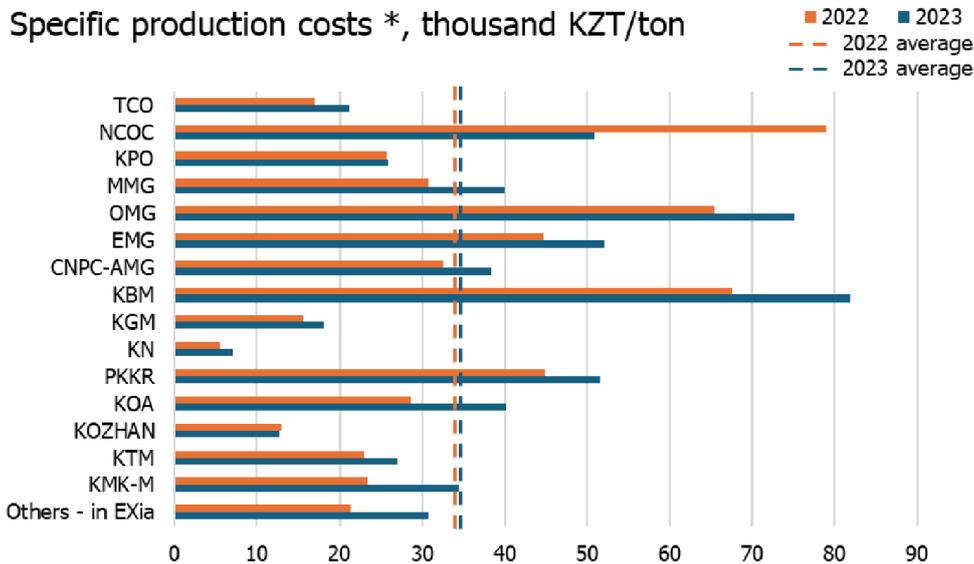
Macro indicator	UoM	2023	2022
Brent crude oil price	USD/barrel	82.49	100.93
Average exchange rate	KZT/USD	456.31	460.48

Sources: U.S. Energy Information Administration (EIA), National Bank of Kazakhstan



Source: compiled by ENERGY Insight & Analytics

TCO had the highest specific revenue in 2023, at 307 thousand KZT per ton, while KTM had the lowest at 109 thousand KZT per ton of oil produced. The perimeter average of the Analytical Platform EXia was 244 thousand KZT per ton in 2023, compared to 285 thousand KZT per ton in 2022.



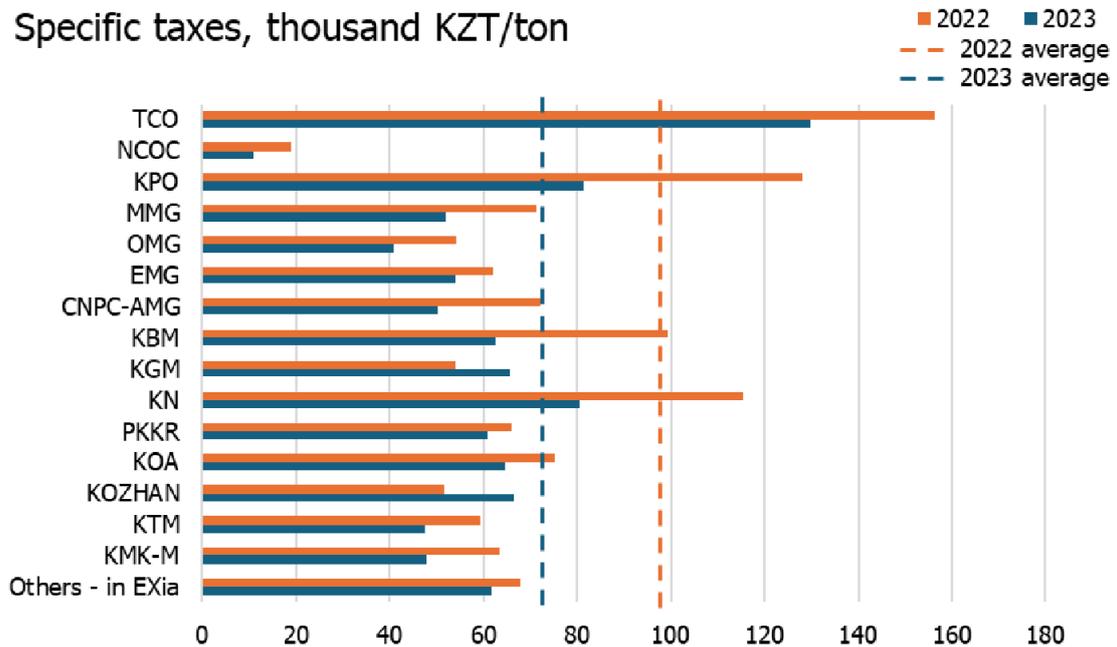
Source: compiled by ENERGY Insight & Analytics

*production costs net of Depletion/Depreciation and Mineral Extraction Tax

The highest specific production costs in 2023 were at KBM, amounting to 82 thousand KZT per ton, while the lowest was at KN, at 7 thousand KZT per ton of oil produced. The perimeter average of the Analytical Platform EXia was 35 thousand KZT per ton in 2023, compared to 34 thousand KZT per ton in 2022.

Part 4. Investment potential of the Republic of Kazakhstan

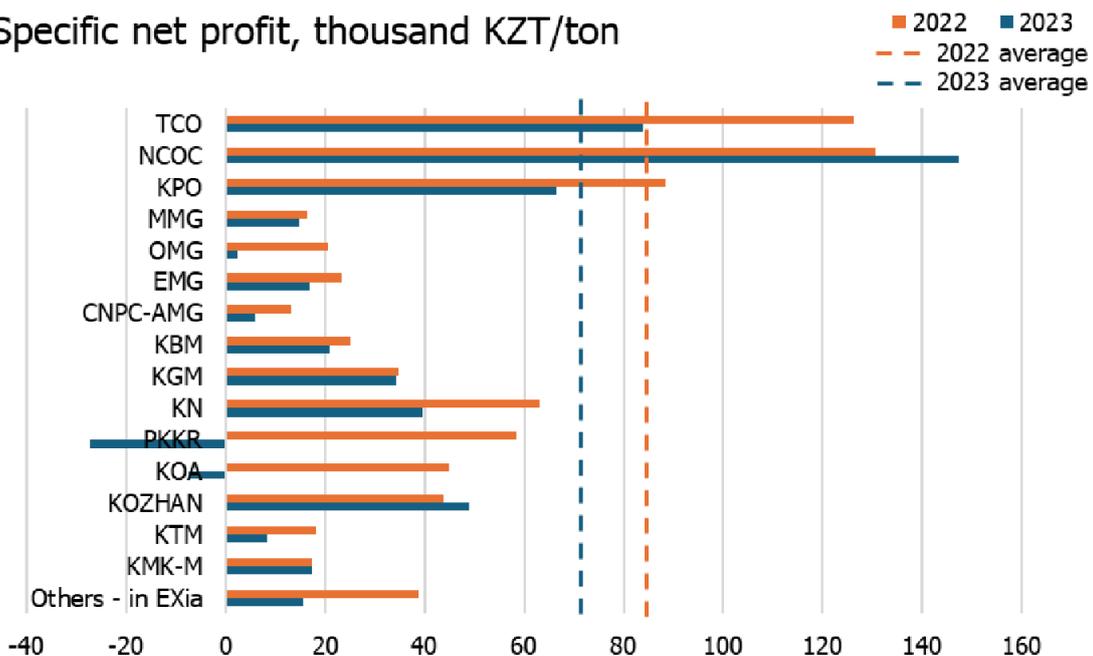
Specific taxes, thousand KZT/ton



Source: compiled by ENERGY Insight & Analytics according to the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan on amounts paid by taxpayers

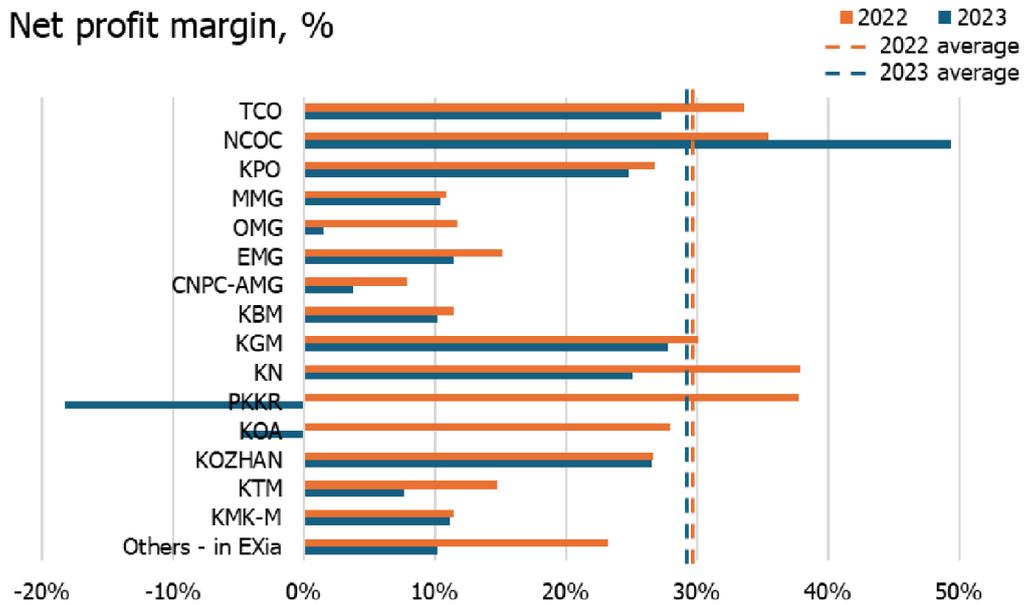
In 2023, TCO faced the highest specific taxes at 130 thousand KZT per ton, while NCOC had the lowest at 11 thousand KZT per ton of oil produced. The average across the Analytical Platform EXia's perimeter was 72 thousand KZT per ton in 2023, down from 97 thousand KZT per ton in 2022.

Specific net profit, thousand KZT/ton



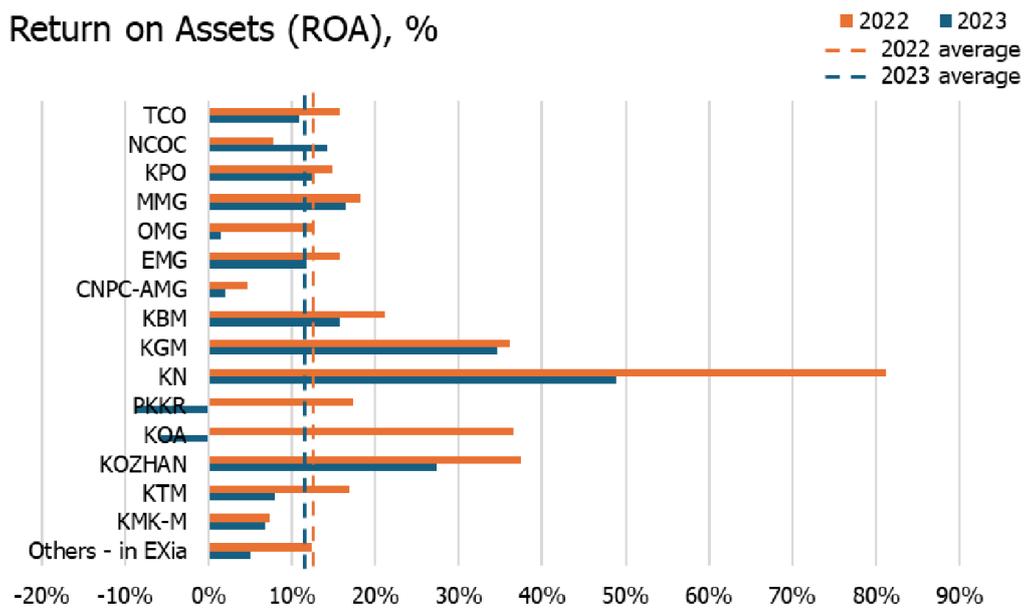
Source: compiled by ENERGY Insight & Analytics

In 2023, NCOC had the highest specific net profit, amounting to 147 thousand KZT per ton, while PKKR recorded the lowest, with a loss of 27 thousand KZT per ton of oil produced. The perimeter average on the Analytical Platform EXia was 71 thousand KZT per ton in 2023, down from 84 thousand KZT per ton in 2022.



Source: compiled by ENERGY Insight & Analytics

The highest net profit margin in 2023 was in NCOC at 49%, while PKKR posted the lowest at -18%. According to the Analytics Platform EXia, the average for the perimeter stands at 29.0% in 2023, compared to 29.5% in 2022.



Source: compiled by ENERGY Insight & Analytics

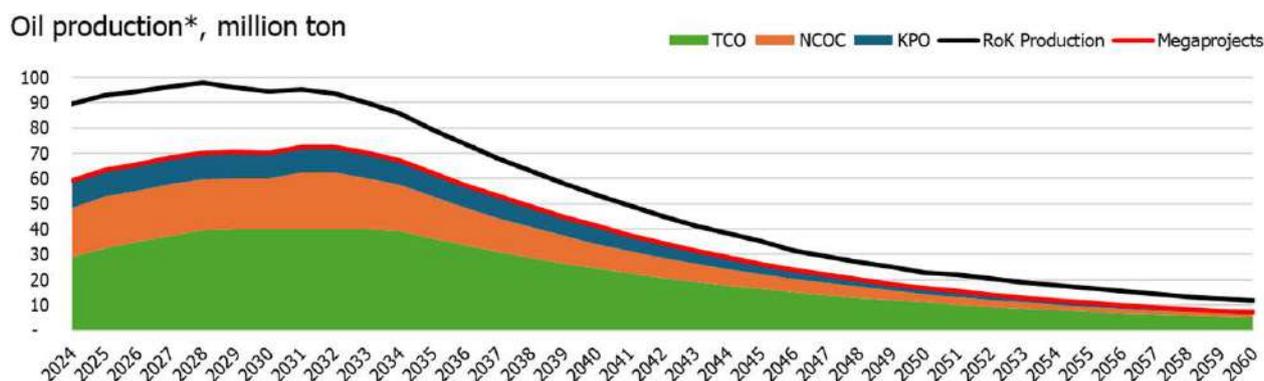
Part 4. Investment potential of the Republic of Kazakhstan

The highest return on assets (ROA) in 2023 is 49% for KN, while the lowest is -9% for PKKR. The average ROA for the Analytics Platform EXia is 11.9% in 2023, compared to 12.6% in 2022.

Prospects for Kazakhstan's Oil Production

An oil production forecast has been prepared by ENERGY Insights & Analytics to assess investment potential. This forecast includes only projects where investments have already been made, are currently underway, or where final investment decisions have been made, ensuring that investments will begin soon. For example, Phases 2B and 3 of the Kashagan project are not included, as the timing for investment and subsequent oil production remains uncertain. Similarly, oil production from the Kalamkas-sea & Khazar project is excluded for the same reason.

The forecast predicts that oil production will increase from 89 million tons in 2024 to a peak of 98 million tons by 2028, driven primarily by the planned expansions of megaprojects. However, production from other companies is expected to decline. By 2034, the share of megaprojects in Kazakhstan's total oil production is projected to reach a maximum of 78%, compared to 66% in 2023.



Source: ENERGY Insight & Analytics

* including FGP/WPMP project for TCO, 1 bcma and 2,5 bcma (Phase 2A) projects for NCOC, KEP1 A+B for KPO

It should be noted that, according to the forecast prepared by the Government of the Republic of Kazakhstan as part of the country's socio-economic development forecast for 2025-2029 (2nd stage), oil production is projected to reach 97.2, 101.5, 105.5, 103.9, and 104.8 million tons in 2025, 2026, 2027, 2028, and 2029 accordingly. The oil production targets set by the government appear to include projects for which investment decisions have not yet been made and for which investment has yet to be secured. Achieving these targets will require maintaining and enhancing the sector's investment attractiveness, a topic explored in detail in the analytics article «Kazakhstan's overall attractiveness for upstream investment: Insights from S&P Global's E&P ratings: Insights from S&P Global's E&P ratings» in the following part.

Current Investment Potential

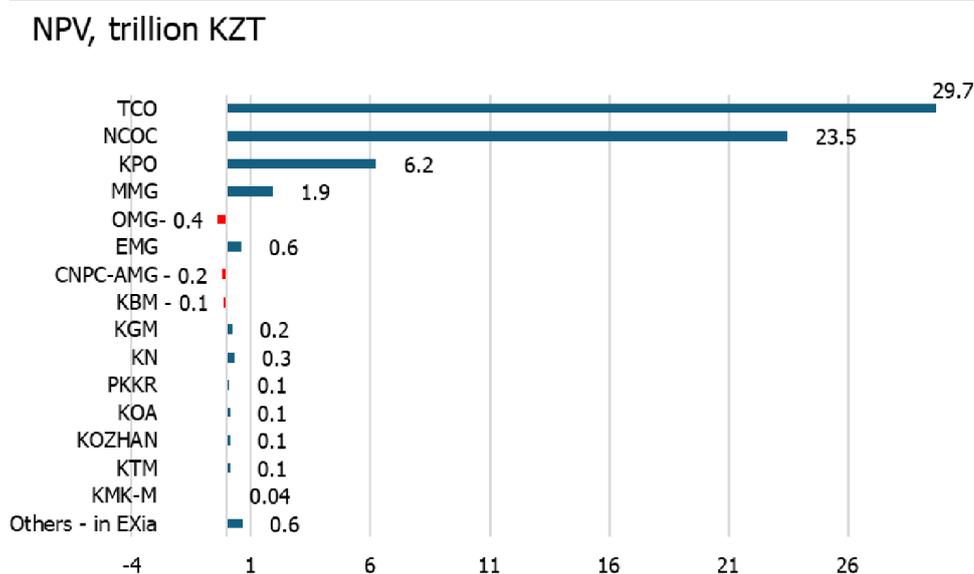
Investment potential was assessed based on the dynamics of key financial and economic indicators for oil-producing companies. These include operating, transportation, and capital costs, tax regime parameters, oil sales structure, cash and debt balances, and forecast oil production

profiles, among other assumptions. The key assumptions are outlined below. NPVs were calculated using the Analytical Platform EXia. As mentioned earlier, NPV indicates investment potential: the higher the NPV, the better. Conversely, companies with an NPV below zero are either destroying shareholder value or are expected to do so in the future.

Assumption	UoM	2025	2030	2035	2040
Brent crude oil price	USD/баррель	87	95	104	112
Average exchange rate	KZT/USD	470	470	470	470
Inflation rate KZT	%	6.5%	5.0%	5.0%	5.0%
Inflation rate USD	%	2.1%	2.1%	2.1%	2.1%

Source: compiled by ENERGY Insight & Analytics

A discount rate of 12.5% was applied to assess the present value of cash flows, The discount rate is consistent with A. Damodaran’s calculations for upstream oil companies.

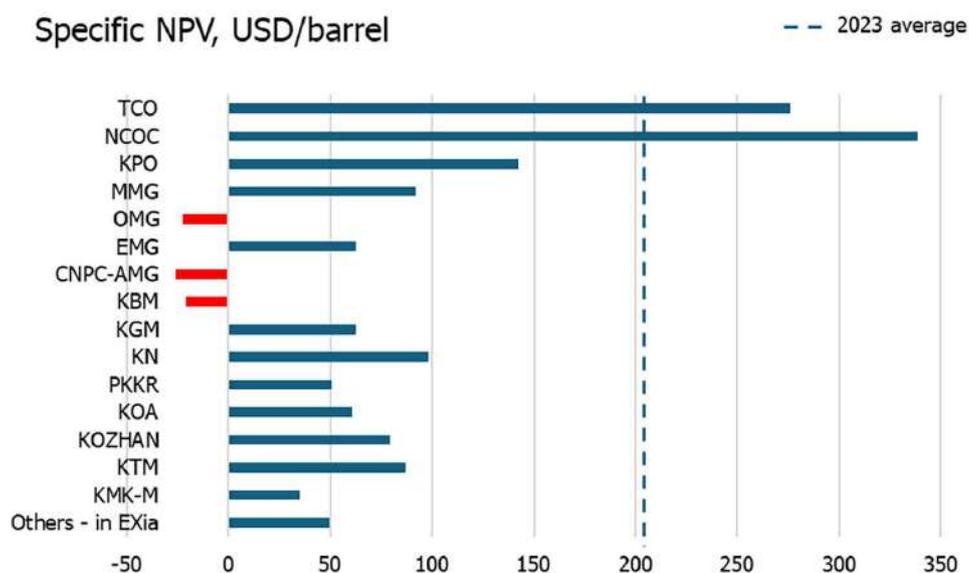


Source: compiled by ENERGY Insight & Analytics

The total NPV of oil-producing companies included in the scope of the Analytical Platform EXia is estimated at 63 trillion KZT (134 billion USD). TCO has the highest NPV at 29.7 trillion KZT (63.2 billion USD), while OMG has the lowest, with a negative NPV of -0.4 trillion KZT (-0.8 billion USD). Megaprojects account for 95% of Kazakhstan’s oil industry’s total NPV, thus its investment potential.

A significant gap in oil production volumes between megaprojects and other oil-producing companies makes it difficult to compare their prospects directly. NPV per unit of (expected) oil produced in 2024 was calculated to enable a more meaningful comparison. NCOC has the highest specific NPV at 338 USD per barrel (1.3 million KZT per ton of oil produced), while CNPC-AMG has the lowest at -26 USD per barrel (minus 92 thousand KZT per ton of oil produced). The average NPV value across the perimeter of the Analytical Platform EXia is 202 USD per barrel (734 thousand KZT per ton of oil produced).

Part 4. Investment potential of the Republic of Kazakhstan



Source: compiled by ENERGY Insight & Analytics

Bottom Line

Considering the expected increase in competition for investment and the President of Kazakhstan's directive to double GDP, it is necessary to justify the target GDP growth figures by enhancing investment attractiveness and, consequently, increasing (foreign) direct investment in Kazakhstan's oil and gas industry. An assessment of the current investment potential of the oil-producing sector, conducted by ENERGY Insights & Analytics, reveals an extremely high concentration in megaprojects, driven by their large relative size in production and favorable tax regimes. Monitoring investment potential trends, along with forecasting changes under evolving business conditions (such as the parameters of the New Tax Code of the Republic of Kazakhstan), will enable us to evaluate progress in boosting the industry's investment attractiveness and, ultimately, the growth of direct investment.

The Analytical Platform EXia integrates several modules that enable users to comprehensively assess the current state and future prospects of Kazakhstan's oil and gas industry, including the investment potential of individual companies and the country as a whole. In the «Investment Potential» and «Megaprojects» modules, free cash flows and NPV are calculated under various production scenarios, oil prices, inflation rates, export sales share, exchange rates, cost of capital, etc. This allows users to evaluate a company's prospects for investment decisions and identify production assets for purchase that meet specified criteria. The «Taxes» module enables users to analyze the dynamics of payments to the state budget by oil-producing companies, focusing on taxes and other mandatory fees and forecasting tax payments based on selected oil price scenarios and production profiles.

Part 5. ANALYTICS BY S&P GLOBAL COMMODITY INSIGHTS

This part presents two analytical reports from S&P Global Commodity Insights, focused on topics directly impacting the investment potential of Kazakhstan’s oil and gas industry, which was discussed in the previous part. The investment attractiveness of the oil & gas industry largely depends on the investor’s ability to return and multiply their investments, and Kazakhstan’s KEBCO crude grade allows domestic oil producers to mitigate the negative side effects of sanctions imposed on Russian oil. S&P Global Commodity Insights, as a global provider of market information and a developer of highly acknowledged analytical products, maintains well-deserved respect, and its opinion deserves close attention from our readers.

S&P Global
Commodity Insights

KAZAKHSTAN’S OVERALL ATTRACTIVENESS FOR UPSTREAM INVESTMENT: INSIGHTS FROM S&P GLOBAL’S E&P RATINGS

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Kazakhstan’s upstream exploration and development regime remains challenging for investors

Kazakhstan boasts a sizable oil resource base and sizable existing production, with several major identified fields and the potential for further discoveries, particularly in the offshore sector of the Caspian Sea. However, much of Kazakhstan’s remaining potential lies within complex geological formations, which can impact the costs associated with future development. As of January 1, 2023, the country’s officially reported recoverable A+B+C1 oil reserves – roughly equivalent to the proven and probable reserve categories in international terms – totaled approximately 3.25 billion tons (~25 billion barrels). And yet, Kazakhstan’s upstream exploration efforts in the past two decades have been generally lackluster, having drilled only 53 new field wildcat wells (NFWs) since 2015 and 366 since 2000 through 2023.

Capitalizing on Kazakhstan’s oil production potential depends on attracting investment in several key areas:

- **Extending existing contracts, especially with operators of the «Big Three» projects.** The opportunity exists when negotiating the contract extensions to leverage additional investment, so as to help ensure sustained output, optimal technological performance,

and minimal disruptions, while adding opportunities for production expansion and/or production decline attenuation.

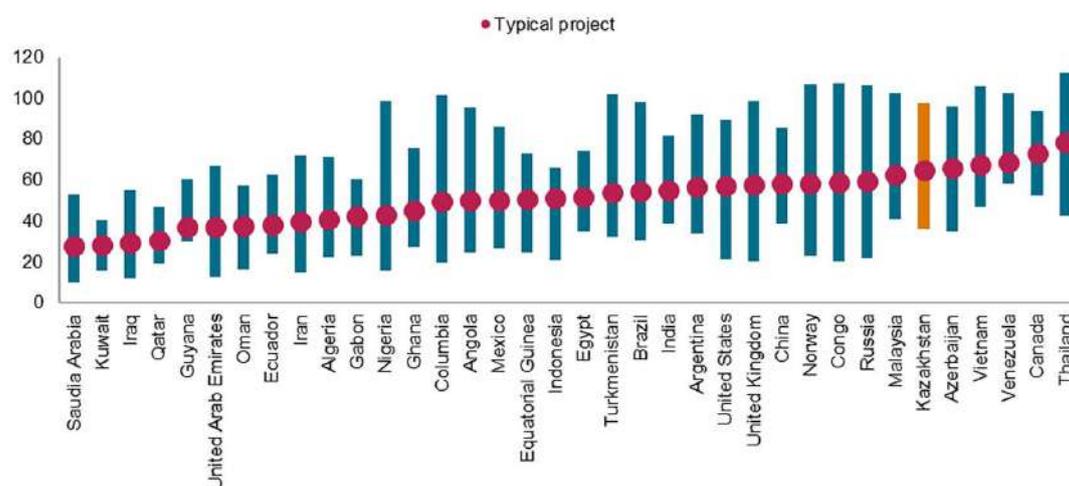
- **Unlocking the full potential of the smaller producers, whose reserves can typically support much higher output than achieved so far.** The reserve base of the smaller producers in northwest Kazakhstan in particular could support substantially higher production volumes than seen to date, even without factoring in potential new discoveries.⁶
- **Applying new technology to legacy assets to increase their effectiveness and extend their producing life.** Much of Kazakhstan's mature operating assets contain significant potential for application of new technologies to improve their operation.
- **Bringing in new upstream projects.** There is also significant potential for incremental production following additional exploration activity and new field development, based on conventional reserves first and foremost but even perhaps including some of the country's unconventional (tight) oil reserves. As discussed below, the results of upstream license bidding rounds in Kazakhstan during recent years seem to have fallen well short of expectations, due (in large part) to above-ground obstacles to full-scale development of the new acreage on auction.

Comparative analysis of upstream costs in oil-producing countries by S&P Global Commodity Insights suggests that Kazakhstan faces significant challenges in competing with other international destinations for the new foreign investment required to finance upstream development. Kazakhstan has a relatively high production costs for a typical new upstream project, estimated at about \$66.2 per barrel in 2023 (see Figure 1).⁷ In contrast, over 90% of the 25 million barrels per day of new global crude production that will need to be mobilized to meet demand globally by 2040 breaks even at less than \$60 per barrel (Brent equivalent) (in 2023 dollars).

⁵ The wider benefits to Kazakhstan of more production by the smaller companies include a smoothing of the national oil production profile and greater flexibility in filling the capacity of export pipelines as well as more sustainable socio-economic development of the regions where smaller producers are active (and where the number of people employed by the oil industry is much greater than in the case of the «Big Three» projects). For more on the challenges confronting smaller producers, and unrealized opportunities, see S&P Global Commodity Insights, Insight, Kazakhstan's Small Oil Producers: Will renewed growth spurt be allowed to continue?, February 2013.

⁶ Break-even costs apply to «new» (or incremental) oil production. Importantly, development of new oil production requires significant capital expenditure (capex); therefore, a very useful way of analyzing oil production costs are so-called full-cycle costs at the wellhead that includes opex, capex, and upstream taxation. Essentially, full-cycle costs capture the cost of finding, developing, and then producing «new» oil production capacity. S&P Global shows these as break-even costs at the country level in aggregate, but actually involves analysis of individual upstream development projects within each country's portfolio; hence, they are shown as a range.

Figure 1. Full-cycle break-even costs in terms of Dated Brent for selected oil-producing countries in 2023 (\$/b)



Data compiled October 2024.
Assumes a 20% rate of return.

Source: S&P Global Commodity Insights.
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In fact, operating costs for a typical producer in Kazakhstan lie in the \$9-10/bbl range, and total costs (which also includes upstream and export taxes and long-distance transportation) are around \$30-35/bbl.⁸ Currently, around half of a typical producer’s total costs are comprised of the major oil sector taxes – MRET, export duties, and export rent tax even at relatively low world prices – while operating costs and transportation expenses each comprise around a quarter of total costs. To address these challenges of relatively high costs and long transportation routes, improving the country’s fiscal and regulatory terms can help level the playing field and attract investors.

One key signpost of investor reluctance to undertake new upstream projects without further amelioration of above-ground conditions is the limited success in new upstream bidding rounds within the framework of the online (electronic) process initiated in 2020 for auctioning E&P blocks (e.g., cancellations, insufficient number of participants, and the lack of participation by international oil companies [IOCs]). Current fiscal terms for mature fields in Kazakhstan also appear inadequate for full implementation of redevelopment plans by the national oil company KazMunayGas (KMG) to significantly slow or reverse decline rates at legacy fields.

Additionally, Kazakhstan struggles to offer the advantaged (low-cost, low-carbon) barrels that IOCs are increasingly seeking. Kazakhstan’s primary sources of advantaged barrels are largely concentrated in the existing «Big Three» upstream projects that are now reaching maturity. In 2023 these projects’ remaining recoverable oil (crude plus condensate) reserves amounted to an estimated 2.3 billion tons (18.5 billion barrels).⁹ Furthermore, expansions of

⁷ See IHS Markit, Strategic Report, Upstream oil production costs in Kazakhstan: How resilient are Kazakh producers to low prices?, November 2020.

⁸ According to S&P Global estimates, even by the end of their contracts, the remaining recoverable (2P) reserves of oil and condensate would be substantial: in 2033, TCO is projected to still have approximately 175 MMt (1.4 billion barrels) of recoverable reserves; NCOC would have 1,244 MMt (9.6 billion barrels) in 2041; and KPO is expected to have 74 MMt (616 million barrels) in 2037.

these projects are covered by existing license terms. The IOC-investors are naturally keen to maintain their existing positions and likely willing to expand their investment to boost output. This puts Kazakhstan in a strong position to negotiate extensions of their operating licenses and potentially secure additional investments. Notably, Azerbaijan successfully achieved this result with its oil megaproject, Azeri-Chirag-Gunashli, in 2017 and 2024 (for deep gas development), after it had previously done so with the Shah Deniz gas project in 2013.¹⁰

Noting a lack of inflow of fresh foreign investments into the oil and gas industry for new projects (dating since about 2009 when new Production Sharing Agreements [PSAs] were abolished), the government made changes to the Tax Code in 2018 in an attempt to improve the situation. But showing only limited success, the government has then moved forward with other measures to enhance investment terms, such as introducing the Improved Model Contract (IMC) in 2023.¹¹

The February 2023 signing of the first contract on IMC terms – by Lukoil and KMG, for the Kalamkas More-Khazar project – was an early indication of the new investment regime's potential. As of September 2024, the Ministry of Energy reported that a total of six contracts have been signed under the IMC framework, with an estimated investment total of \$9 billion.¹² A key indicator of its continued success will be the progress made on signed projects and the ability to secure contracts with other operators, especially Western international majors.

While the IMC offers significant incentives, it does not fully address several challenges that hinder the attractiveness of resource development for outside investors, particularly the lack of stable contract terms for long-term complex projects. The IMC did not mitigate key impediments, including general taxes, environmental regulations, and regulatory terms that are not «locked» and stable throughout the project lifetime. Additionally, it imposes onerous local content requirements for labor, equipment, and services, which is counterintuitive given the need for high levels of international expertise in developing complex deposits. Other challenges include persistent administrative rigidities, such as annual work program reporting requirements, ongoing obligations for unrelated social and economic investments in local regions, and the requirement for a signing bonus.

Over the years, many international oil companies have generally remained optimistic about continuing their activities in Kazakhstan. But this view may be changing materially now, as companies seek best terms globally. As the contracts for the «Big Three» projects near expiration within the next decade or two, concerns arise about future national output levels without contract extensions. Additionally, the uncertainty surrounding the multi-billion-dollar arbitration proceedings initiated by the Republic of Kazakhstan against the Kashagan and Karachaganak consortia in 2023 may diminish international oil companies' interest in pursuing further upstream investments.¹³

⁹ «BP makes Breakthrough in Azerbaijan with ACG Extension,» Neftecompass, Dec. 29, 2016; «Azerbaijan Secures \$20 Billion Investment for ACG Field,» Neftecompass, January 12, 2017; IHS Markit, Headline Analysis, Azerbaijan agrees to extend PSA for Shah Deniz project to 2036, January 2013.

¹¹ See S&P Global Commodity Insights, Insight, Kazakhstan's long-awaited Improved Model Contract for hydrocarbon exploration and production signed into law: Have conditions improved enough to spur new upstream exploration?, March 2023.

¹² On November 1, 2024, Kazakhstan's Ministry of Energy and QazaqGaz signed two additional IMCs to enhance the country's natural gas situation: one for the Maldybai subsoil site in the Zhambyl Oblast and another for the Shalkar subsoil site in the Aktobe Oblast, in collaboration with KOR Oil Company.

¹³ See S&P Global Commodity Insights, Insight, Kazakhstan yet again pushes its main upstream foreign investors for changes in terms: Is this effectively killing the proverbial golden goose?, June 2024.

In summary, Kazakhstan's initiatives to enhance upstream exploration regulations are crucial for attracting investment and developing its national oil production potential. However, addressing the challenges of high break-even costs, improving fiscal and regulatory terms, and ensuring stable contract conditions will be essential for fostering a more attractive investment environment.

Kazakhstan's current standing in S&P Global's E&P Attractiveness Ratings

Nonetheless, Kazakhstan's international standing actually has improved some during the past ten years in the E&P attractiveness ratings system developed by S&P Global, which are updated quarterly. But the country nevertheless typically trails most other oil-producing countries that are competing with Kazakhstan for scarce global capital. Governmental policy shifts to address international players' concerns in a few key areas, however, could significantly boost the country's rating and appeal among would-be investors.

Kazakhstan is one of about 110 (comparator) oil-producing countries covered in S&P Global's E&P Attractiveness Ratings (EPAR) – a rating system developed by S&P Global's E&P Terms and Above-Ground Risk (EPTAGR) service, which is updated on a quarterly basis. The EPAR score of Kazakhstan and other nations is comprised of a blend of different scores representing the fiscal regime, legal and contractual terms, and overall oil and gas risk. As detailed by S&P Global in *The National Energy Report 2023*,¹⁴ despite considerable progress Kazakhstan has typically continued to underperform overall vis-à-vis many other countries, owing in particular to a low fiscal component score, and this was also the case in the latest iteration of EPAR, for 4Q-2024 (for an overview of S&P Global's E&P attractiveness ratings methodology, see text box).¹⁵

The S&P Global E&P Attractiveness Ratings (EPAR) Methodology: Shifting to an Above-Ground Focus

The EPAR ranking of a country is based on a quantitative assessment of the overall exploration and production (E&P) attractiveness for upstream petroleum investment. Starting in January 2023, S&P Global's EPAR weights were changed to focus more on above-ground factors that affect a country's E&P investment environment.

EPAR is composed of 60+ variables relating to three core above-ground components that affect the value of upstream investments: the Fiscal Systems component (accounting for 30% of the total attractiveness rating), the Legal & Contractual component (30%) and the Oil & Gas Risk component (40%).

Each variable – the three major components as well as the primary categories within these – is assigned a rating ranging from 1 to 10 (where 1 represents the least attractive and 10 the most attractive outcome from an investor's

¹⁴ This report can be found at <https://kazenergy.com/ru/operation/ned/2117/>

¹⁵ For additional background on the methodology and evolution of the scoring criteria, see S&P Global Commodity Insights, Methodology, EPTAGR E&P Attractiveness Ratings Methodology, August 2024; and S&P Global Commodity Insights, Service Bulletin, Service Alert: Upcoming changes to E&P Attractiveness Ratings default weights, December 2022.

Part 5. Analytics by S&P Global Commodity Insights

perspective). The scores for each variable are then weighted to calculate the overall E&P attractiveness score for each country. While the model encompasses some aspects that can be directly quantified, many of the scores accorded to the countries covered are based on qualitative judgements of S&P Global experts.

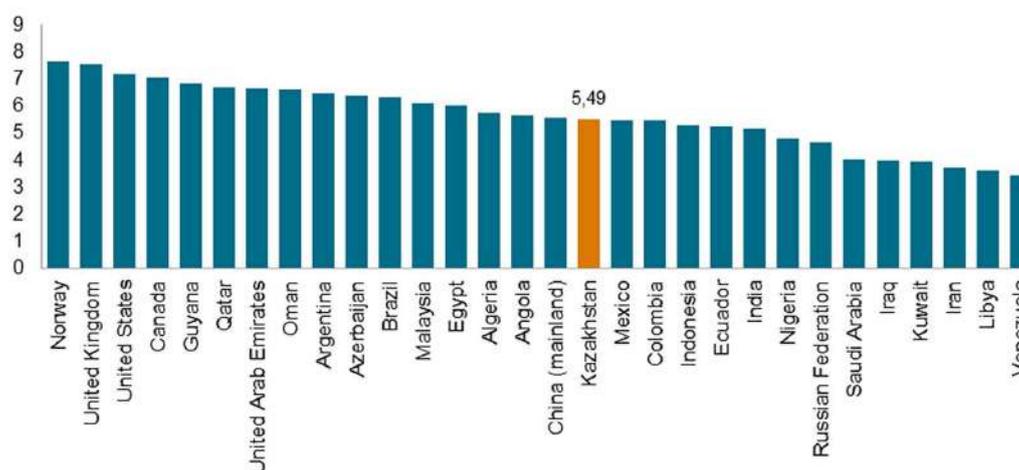
Kazakhstan's progress is illustrated by a review of changes in fourth-quarter ratings each year during 2014-24: Kazakhstan's overall rating during this period (with 10 being the highest possible score) improved from 4.94 to 5.49, while its rank among a total of around 110 countries selected for analysis (with 1 being the highest ranked and most attractive) improved from 89 to 73 (see Table 1. Evolution of Kazakhstan's E&P Attractiveness Ratings score and rank, 2014-24). Kazakhstan scored about average in 4Q-2024 in the Legal & Contractual component and slightly above average in the Oil & Gas Risk component, but these relatively positive results were outweighed by Kazakhstan's below-average Fiscal Systems score (see Figure 2. S&P Global's E&P Attractiveness Ratings of selected hydrocarbon-producing countries for Q4 2024).¹⁶

Table 1. Evolution of Kazakhstan's E&P Attractiveness Ratings score and rank, 2014-24

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Overall attractiveness rating	4.94	4.86	4.84	5.08	4.82	4.78	4.51	5.52	5.37	5.51	5.49
Kazakhstan's rank among all oil-producing countries selected for comparison	89	88	90	84	81	82	88	72	79	73	73

Ratings and rankings for the fourth quarter of each year.

Figure 2. S&P Global's E&P Attractiveness Ratings for selected hydrocarbon-producing countries in Q4-2024



Data compiled October 2024.
Ranking as of fourth quarter 2024 for 30 largest crude oil producers in 2023.

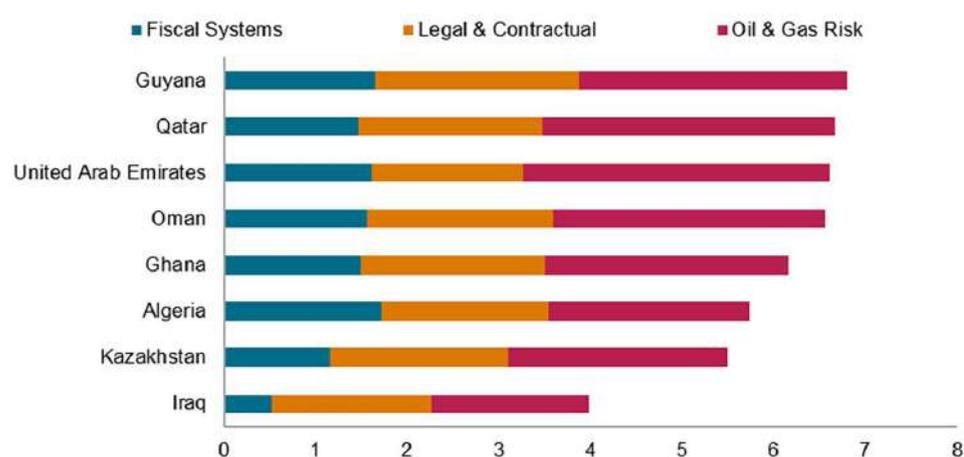
Source: S&P Global Commodity Insights.

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¹⁶ The ratings throughout the period 2014-24 include the Fiscal Systems and Oil & Gas Risk components, while the Legal and Contractual component was incorporated starting in 2021. It should be noted that the periodic refinement of the methodology for E&P attractiveness ratings may complicate analysis of changes in any country's score over an extended period of time; e.g., given changes in the number of indicators considered and changes in a country's peer group. Nonetheless, the key indicators remained relatively consistent during the 2014-24 period.

However, the S&P Global analysis has shifted the composition of Kazakhstan’s peer group over the years, and is now considered part of the Petrostate» group. In the fourth quarter of 2024, Kazakhstan ranked only 7th place out of 8 nations in this Petrostate peer group. Within the group, Kazakhstan exhibits some of the same relative strengths and weaknesses as the broader grouping, including comparatively weak performance in the Fiscal Systems component overall, and nearly average performance in the Legal & Contractual component. But the area of Oil & Gas Risk showed weaker performance than average for Kazakhstan relative to its peer group even though Kazakhstan scored somewhat above average in terms of Oil & Gas Risk in the case of the wider comparison among hydrocarbon-producing countries evaluated by S&P Global (see Figure 3. E&P Attractiveness Ratings for Petrostate peer group and individual components in Q4 2024).¹⁷

Figure 3. S&P Global's E&P Attractiveness Ratings for Petrostate peer group and individual components in Q4-2024



Data compiled October 2024.

Source: S&P Global Commodity Insights.

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Identification of key areas for improvements that would enhance Kazakhstan’s attractiveness rating

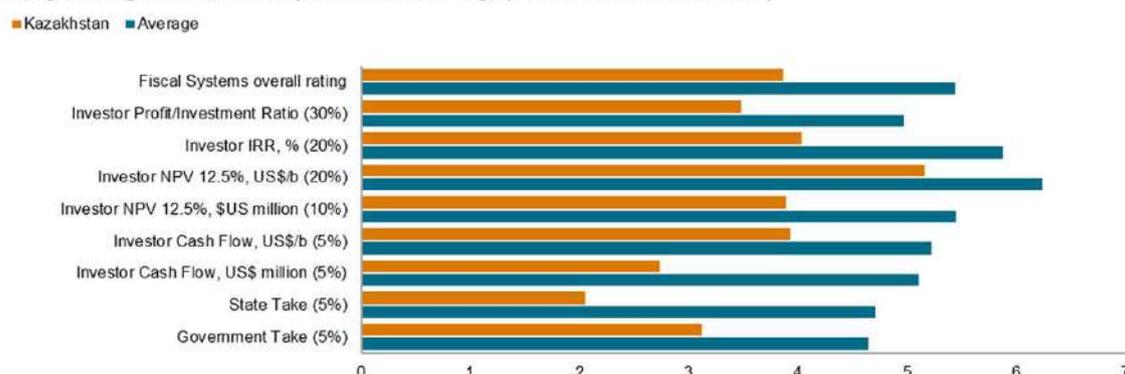
A closer examination of the disparities between the E&P attractiveness ratings of Kazakhstan and other countries in the 4Q-2024 iteration of EPAR reveals several specific areas where Kazakhstan’s score is significantly below average – and where there is thus most room for improvement. Moreover, in several instances where Kazakhstan’s score is already above average, significant further progress also appears quite feasible.

¹⁷ S&P Global defines Petrostates as countries where the production of oil and gas is a major source of economic activity, fiscal revenues and exports; critically, exports of oil and gas by such nations exceeded 20% of total exports over the last five years. For more on key characteristics of the Petrostate peer group (as well and other groupings), see S&P Global Commodity Insights, Strategic Report, Oil & Gas Risk Quarterly: Licensed to operate – The evolution of Civil Society Risk in upstream E&P, August 2024.

Fiscal Systems

In the fourth quarter of 2024, Kazakhstan's Fiscal Systems rating of 3.87 was 29% lower than the average. This gives it a ranking of 97th out of the 112 countries evaluated. Kazakhstan's weak overall Fiscal Systems score reflected below-average results in each of the eight categories within this component (see Figure 4. Kazakhstan's performance in primary categories of the Fiscal Systems component of the E&P Attractiveness Ratings during 4Q-2024 in comparison with average (for all countries evaluated)).

Figure 4. Kazakhstan's performance in primary categories of Fiscal Systems component of the E&P Attractiveness Ratings during 4Q-2024 in comparison with average (for all countries evaluated)



Data compiled October 2024.

Source: S&P Global Commodity Insights.

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With respect to the primary categories within the Fiscal Systems component (accounting between them for 70% of the total component rating), Kazakhstan ranked 30% below average for Investor Profit/Investor Ratio, 31% below for Investor IRR, and 17% below for Investor NPV (measured in dollars per barrel). **The clear implication is that additional tax reforms, needed to alleviate the fiscal burden on investors, should be a top priority of policymakers.** The two problematic aspects to Kazakhstan's existing tax regime are well known:

- Kazakhstan's overall tax take for upstream projects is relatively high by international standards.
- The tax instruments also are structured to ensure early revenue for the government before profitability has been assured for the producer. This means that the tax burden is not proportional to the risks born by the investor, particularly at early stages of the project cycle.

As noted by S&P Global previously, it is probably not coincidental that Kazakhstan's oil production has largely stagnated (aside from the cases of Tengiz and Kashagan) since the use of PSAs for new projects was ended in 2009. Investors were attracted to PSAs for two main reasons: the long-term stability of the tax environment and the opportunity for cost recovery. It simply needs to be recognized that PSAs can be structured to be attractive to both the contractor and government since they can be adjusted to suit particular project circumstances without changing the overall fiscal framework for the country.¹⁸

¹⁸ Of the «Big 3» IOC-led consortia, accounting between them for the lion's share of Kazakhstan's oil production, those developing the Kashagan and Karachaganak fields are both PSA projects; the Tengizchevroil consortium developing the Tengiz field is technically a joint venture but is structured like a PSA.

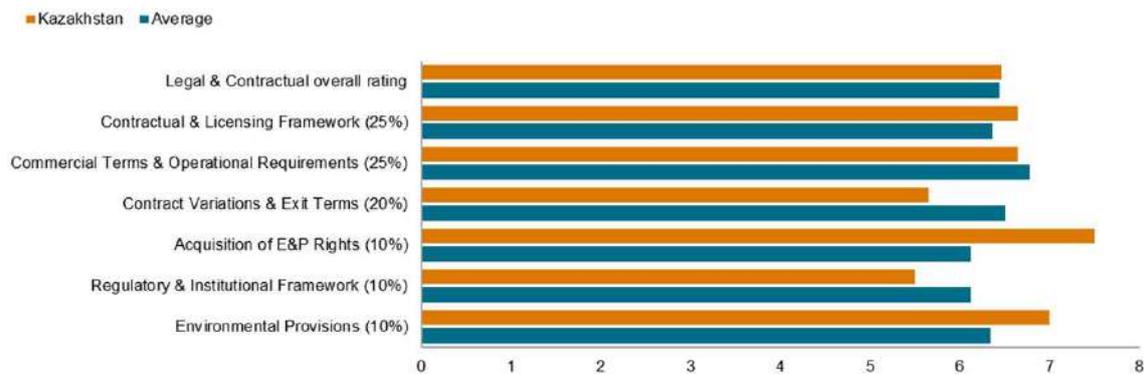
Significantly, Kazakhstan’s Fiscal Systems rating did not materially change following the aforementioned 2023 enactment of IMC terms for complex projects, and its Fiscal Systems ranking relative to other countries has actually deteriorated slightly since then. Although the IMC was an encouraging step in the right direction, the positive influence on investor sentiment of the new preferential fiscal terms on offer seems to have been largely canceled out by accompanying restrictions on their scope. For example, the IMC offers stability of fiscal terms in the case of some existing taxes but not others, and the stability guarantees do not extend to potential new taxes (while other limitations of the IMC further limit its overall appeal). Approval of more comprehensive fiscal incentives for complex projects is probably a *sine qua non* for significant improvement of Kazakhstan’s Fiscal Systems rating.¹⁹

At the same time, improved state budgetary planning would help in minimizing deficit spending by the government, which has tended to drive the associated risk of additional tax requirements from oil producers. This tends to add new fiscal uncertainties (see discussion below of Kazakhstan’s performance in terms of the Primary Fiscal Balance indicator within the Oil & Gas Risk component).

Legal & Contractual

Kazakhstan’s 4Q-2024 ratings in the Legal & Contractual component, 6.46, was higher than the average for the countries under consideration, but only barely; this puts Kazakhstan at 49th place out of the 112 countries evaluated. The country performed above average in half of the six categories and below average in the others (see Figure 5. Kazakhstan’s performance in primary categories of Legal & Contractual component of the E&P Attractiveness Ratings during 4Q-2024 in comparison with average (for all countries evaluation)).

Figure 5. Kazakhstan's performance in primary categories of Legal & Contractual component of the E&P Attractiveness Ratings during 4Q-2024 in comparison with average (for all countries evaluated)



Data compiled October 2024.

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¹⁹ For more detail on the fiscal elements of the IMC regime, see S&P Global Commodity Insights, Insight, Kazakhstan’s long-awaited Improved Model Contract for hydrocarbon exploration and production signed into law: Have conditions improved enough to spur new upstream exploration?, March 2023, pp 7-8.

The below-average results in a number of categories were chiefly due to poor scores in just a few areas, largely reflecting traditional Kazakh policies that tend to discourage new investment. For example:

- **The main factor holding down the rating for Commercial Terms & Operational Requirements was a comparatively low Local Content Requirements score.** The result for this indicator (54% below average) reflects Kazakhstan's relatively onerous domestic content requirements. These often prove challenging for investors given the limited number of domestic goods and service providers within certain equipment and service categories. Kazakhstan's score in this area could be significantly enhanced through greater flexibility in application of such requirements, and more clarity and transparency in local content rules.
- **The Regulatory & Institutional Framework rating suffered primarily from the below-average score for State Involvement in E&P Activities.** This score (31% lower than average) is a signpost of the risks to the country's E&P attractiveness rating entailed by Kazakh policies that enhance the role of state actors in the E&P sector at the potential expense of other industry players. A key example are the amendments to the Subsoil Code that went into effect in February 2024 mandating that a national company must hold at least a 50% share in the development of all large oil and gas projects.²⁰
- **Kazakhstan's score in the category of Contractual & Licensing Framework (though above average overall) is hindered by underperformance in two sub-categories in particular:**
 - **Exploration Rights & Acreage.** The low rating for this indicator (8% below average) is underscored by the rather lackluster results of the online auction regime. Only one third of the blocks included in the initial tender were sold in the ninth such auction held in May 2024.²¹ The chief precondition for better auction outcomes is probably more far-reaching policy reforms needed to improve the upstream business climate generally.
 - **Associated Gas Terms.** Kazakhstan's score in this area was 36% below average. Low domestic gas prices continue to substantially limit the returns from upstream investment, and are also one of the main reasons why reinjection has become one of the most widespread gas utilization options for oil producers.²² Reforms in Kazakh gas market policy and regulations, such as being championed by QazaqGaz, hold promise for facilitating more effective monetization of associated gas.

Oil & Gas Risk

Kazakhstan 4Q-2024 EPAR score of 5.99 in the Oil & Gas Risk component was 3% higher than average, leaving the country at 54th place out of the 112 countries evaluated. Kazakhstan scored above average in three of the five primary Oil & Gas Risk categories, but below average in the others (see Figure 6. Kazakhstan's performance in primary categories of Oil & Gas Risk

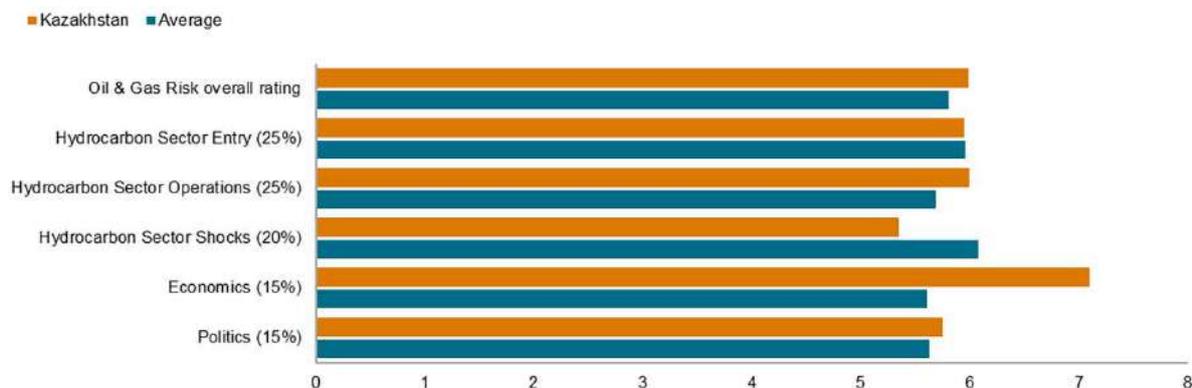
²⁰ See S&P Global Commodity Insights, Market Alert, Legal Regimes Alert: Kazakhstan introduces amendments to Subsoil Code modifying various petroleum operations' procedures: Global Risk Outlook, January 2024.

²¹ See S&P Global Commodity Insights, Energy Technical Report, Ministry of Energy Six companies win eight blocks in latest E&P auction, June 2024.

²² See S&P Global Commodity Insights, Insight, Upstream gas supply in Kazakhstan: Gas availability for consumers remains constrained by high reinjection needs even as gas flaring remains very low, October 2024.

component of the E&P Attractiveness Ratings during 4Q-2024 in comparison with average (for all countries evaluated).

Figure 6. Kazakhstan's performance in primary categories of Oil & Gas Risk component of the E&P Attractiveness Ratings during 4Q-2024 in comparison with average (for all countries evaluated)



Data compiled October 2024.

Source: S&P Global Commodity Insights.

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Within the Oil & Gas Risk component, Kazakhstan scored lowest in the category of Hydrocarbon Sector Shocks (12% below average) – partly due to below-average results in the case of the Ministerial/Policy Volatility indicator (20% below average) and Sanctity of Contract indicator (5% below average). This outcome, in turn, largely reflects Kazakh authorities’ on-again, off-again campaigns directed against international consortia investing in the country, evidently in pursuit of additional compensation. The renewed monetary damage claims and retroactive airing of grievances has undermined confidence in the overall operating environment.²³

The exceptionally strong rating achieved by Kazakhstan in the Economics category (27% above average) was chiefly due to a Non-Payment Risk score that was 41% better than average. But Kazakhstan performed below average in the case of another important Economics indicator – Primary Fiscal Balance – and this also represents an opportunity for enhancement of E&P attractiveness going forward.²⁴ Kazakhstan’s prudent approach to budgetary spending and lowering oil revenue assumptions in the 2021 state budget, for example, helped to improve Kazakhstan’s fiscal balance, but the deficit widened in 2022-23. Such deficits serve as a key indicator for investors of the pressures that will be present in managing their oil production activities, exports and tax payments.²⁵

²³ See S&P Global Commodity Insights, Insight, Kazakhstan yet again pushes its main upstream foreign investors for changes in terms: Is this effectively killing the proverbial golden goose?, June 2024; and S&P Global Commodity Insights, Scheduled Update, Oil and Gas Risk: Global Risk Outlook, August 2024.

²⁴ The fiscal balance of a country is the government’s revenues minus its expenditures, whereas the primary fiscal balance is the same thing except that interest payments are excluded from the tally of government expenditures.

²⁵ See S&P Global Commodity Insights, Feature, OPEC+ buys time with output hike delay, but market fixates on 2025 glut, October 2024; and S&P Global Commodity Insights, Strategic Report, Revisiting current account and fiscal breakevens for 2024 and 2025: Financial pressures come to bear under current oil price projections, January 2024.

KAZAKHSTAN'S KEBCO CRUDE OIL EXPORT GRADE: SOME GENERAL INSIGHTS

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The rebranding of Kazakhstan's crude oil exports transiting the Transneft system

The rebranding of Kazakhstan's crude oil exports via Russia's Transneft system in 2022 reflecting a dramatic reconfiguration of sour crude oil markets in the Mediterranean and Northwest Europe, as European countries moved to restrict, and later sanction, Russian oil imports.

Until 2022, Kazakhstan had exported crude via Russia's oil terminals served by the Transneft pipeline system as either the generic Urals Blend crude and Siberian Light brands. As the wave of self-sanctioning on Russian oil imports intensified in the immediate wake of Russia's invasion of Ukraine, a market need for differentiation of Kazakh-origin crude oil emerged, prompting the country to rebrand these sour crude export flows as Kazakhstan Export Blend Crude Oil – typically referred to as KEBCO. Kazakh crude exports via Transneft typically represent the second-largest segment of Kazakhstan's overall crude exports (after CPC), accounting for 19.7% of the total in 2021 and 15.6% in 2023.

In response to growing market recognition and the demand for price transparency around this key crude oil, Platts, part of S&P Global Commodity Insights, first launched its benchmark price assessment of KEBCO crude on a CIF Augusta and FOB Novorossiysk bases (Black Sea flows) in November 2022. Adding in the northern European markets, it subsequently extended KEBCO assessments to a CIF Rotterdam and FOB Ust-Luga bases in August 2023. These were the main export outlets for

Table 1

Kazakhstan's Exports of KEBCO by outlet

	2021	2022	2023	2024*
A. thousand metric tons				
Total (sum)	13 008	10 327	11 046	10 391
Black Sea	7 114	5 823	5 940	5 859
Novorossiysk	7 114	5 823	5 940	5 859
Baltic Sea	5 894	4 504	4 113	3 106
Ust-Luga	5 894	4 504	4 113	3 106
Druzhba pipeline	0	0	993	1 426
Germany	0	0	993	1 426
B. thousand barrels per day				
Total (sum)	261	207	221	208
Black Sea	142	117	119	117
Novorossiysk	142	117	119	117
Baltic Sea	118	90	82	62
Ust-Luga	118	90	82	62
Druzhba pipeline	0	0	20	28
Germany	0	0	20	28

* Estimated for 2024 based on results through 10 months.

Note: Consists of crude oil exports from Kazakhstan via Russia's Transneft pipeline system.

Source: Transneft, KTO, S&P Global.

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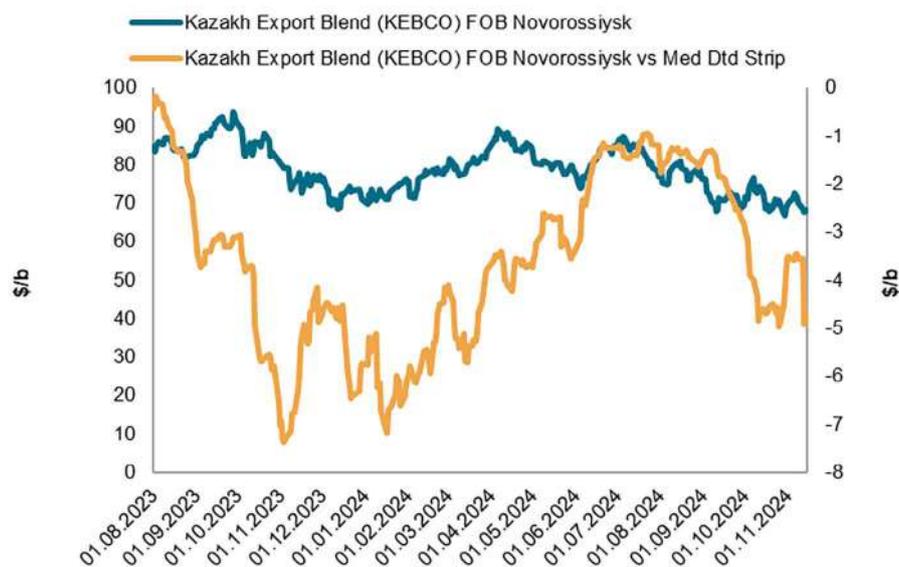
Kazakh crude oil transiting the Transneft pipeline system in 2022-24, to be subsequently joined by deliveries to Germany via the Druzhba pipeline in 2023 (see Table 1). The price differential between KEBCO and Russian Urals Blend – known as the «KEBCO/REBCO spread» – is also published daily by Platts.

With the near-removal of Russian-origin Urals Blend from most of the European market after the embargo enacted by the European Union in June 2022 (going into effect in December 2022 for crude and February 2023 for refined products),²⁶ the wider pool of medium-sour crudes available to European refiners diminished dramatically. The Mediterranean, in particular, has become short of sour crude, not only due to the introduction of the seaborne ban on Russian crude imports by EU countries in December 2022 but also the subsequent loss of around 450,000 b/d of Kurdish (KBT) and Iraqi Kirkuk crudes loading from the Turkish port of Ceyhan in early 2023, owing to a pipeline dispute between Turkey and Iraq. Added to this, a reduction of sour crude output from the OPEC+ group (part of their overall cuts program) has added further tightness in the region.

KEBCO typically trades at a premium in European markets

KEBCO crude has a sulfur content of 1.7% and an API gravity of 31.7, according to the Platts Periodic Table of Crude. A «sour» crude oil by virtue of its sulfur content, KEBCO has typically enjoyed great appeal with European refiners and has been able to fetch relatively strong premiums compared to light-sweet crudes. Historically, higher-sulfur crudes are expected to price at a discount to lighter and sweeter crudes, but a shorter supply of sour crudes against a backdrop of increased inflow of light sweet crudes into the region has prompted a reversal of this typical trend at several times during 2024, with KEBCO leading the European sour crudes complex in commanding a premium at several times throughout 2024 (see Figure 1. KEBCO prices). However, KEBCO dropped to a 21-month low against the Brent dated benchmark in early November, switching to a discount for the first time since February 2023.

Figure 1. KEBCO Prices



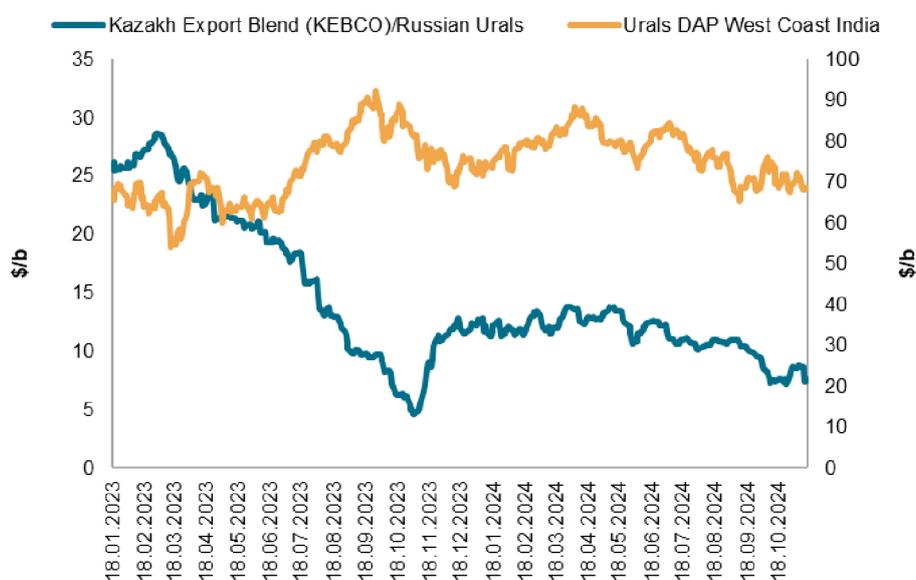
Source: S&P Global Commodity Insights.
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²⁶ See S&P Market Briefing Overview of Russian oil sector dynamics in 2023 and outlook to 2030, November 2023.

Part 5. Analytics by S&P Global Commodity Insights

Since European restrictions on Russian Urals imports have come into play, Kazakhstan's KEBCO has also naturally commanded a strong premium to its Russian Urals Blend counterpart in the region. Over the full year 2023, the average premium of KEBCO to Urals Blend – the KEBCO/REBCO spread – averaged over \$17/barrel and is currently averaging over \$10/b (see Figure 2. KEBCO versus Urals Blend prices). The supply and demand fundamentals of Urals Blend crude now differ dramatically from KEBCO: Russian Urals Blend crude now primarily flows from its traditional Black and Baltic sea outlets to demand centers outside of Europe, with India as its main customer.

Figure 2. KEBCO versus Urals Blend prices



Source: S&P Global Commodity Insights.
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Source: S&P Global Commodity Insights.
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Export volumes of KEBCO are much smaller than Urals Blend, and also have tended to decline recently (see Table 1). Therefore, they have not been able to fully plug the gap in supply left behind from the exit of Russian Urals, and less availability of Kurdish KBT grade crude and Iraqi Kirkuk crudes in the Mediterranean sour crude market. Subsequently, KEBCO continues to enjoy a relatively unique space in the European market as a sour crude of choice, thanks to its proximity to the main delivery demand centers.

In the wider European market, KEBCO is closely correlated with the North Sea's Johan Sverdrup, a sour crude produced in Norway popular among European refiners and recently heard being arbitrated to the Mediterranean (despite an oversupply of sweet crudes in the region), similar to some KEBCO loaded out of Ust-Luga. Seaborne KEBCO consumption is strongly Mediterranean-focused, with the main buyers being trading firms Vitol and Euroasian Oil, and Kazakhstan's national oil company, KMG; the latter is to supply its Midia refinery in Romania.

In seaborne markets, 176,000 b/d of KEBCO were exported in September 2024, according to data from S&P Global Commodities at Sea (CAS).²⁷ This volume was 21,000 b/d down on the month but 20,000 b/d up on year-on-year. May saw the highest volume of seaborne exports to date in 2024 at 220,000 b/d, CAS data shows.²⁸ Italy (83,000 b/d), Romania (59,000 b/d) and Bulgaria (34,000 b/d) were the highest importers of seaborne KEBCO in September, according to CAS. The major destinations, for both crude lifted from Ust-Luga and Novorossiysk, is Romania (reflecting mainly deliveries to the KMG-owned Midia refinery but some also goes to Lukoil’s Petrotel refinery via Constanta) and Italy; these two destinations account for nearly 80% of the total for January-October 2024 (see Table 2). Italy has been the largest KEBCO destination this year. In contrast, Turkish purchases have dropped to zero as they switched to discounted Urals Blend.

Kazakhstan also supplies about 30,000 b/d of KEBCO via the Russian Transneft pipeline system to the 232,000 b/d Schwedt refinery in Germany (see Table 1). Deliveries began in February 2023. Kazakhstan agreed to extend the existing deal to send 1.2 MMt/y in 2025.

Table 2

Kazakhstan's seaborne KEBCO crude oil exports by destination (thousand metric tons)

	Jan-Oct 2023	Jan-Oct 2024
Total (sum)	7 663	8 411
Romania	2 351	3 194
Italy	3 171	3 487
Bulgaria	59	710
Croatia	140	520
Turkey	1 483	0
Spain	280	0
Netherlands	180	500

Source: Kepler, Vortexa, Argus.
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their trade performance, business profile and credit worthiness as well as their familiarity with Platts methodology.

On November 12, 2024, Platts published the first traded offer for KEBCO crude in its dedicated MOC assessment process, powered by eWindow functionality, with oil trader Petraco accepting an offer from Italian oil major ENI of 80,000 metric tons of KEBCO crude delivered November 23-27 on a CIF Augusta basis at Dated Brent minus \$1.75/b.

Platts may also take into account additional activity outside of the MOC price assessment process, including direct and confirmed data; bids and offers and trades that are corroborated and verified by market participants as well as indicative prices, previous trades and price moves in related markets.

Platts is committed to providing transparency to the markets it assesses and employs a methodology designed to produce price assessments that are representative of market value. Platts price assessments of KEBCO crude are based on observable and measurable spot-market activity. Market activity is reported to Platts through firm bids, offers and trades that are published in the Platts Market on Close (MOC) price assessment process, a live time-structured price assessment process. Bids, offers and interests to trade are submitted into the process by market participants, including producers, consumers, traders and brokers, and incrementally move towards tradeable value in an open and transparent manner. Market participants are reviewed for participation in the Platts MOC on the basis of stringent criteria, including their ability to trade in the market,

²⁷ According to pipeline shipment data, a total of 800,000 tons (195,000 b/d) of Kazakh crude were loaded out of Novorossiysk and Ust-Luga in September.

²⁸ Pipeline shipment data indicate that total KEBCO flows were 800,000 tons as well in May 2024.

Part 6. ENERGY INSIGHTS & ANALYTICS

Analytical center «ENERGY» LLP (ENERGY Insight & Analytics) is a joint venture between [the KAZENERGY Association](#) and IT company [AppStream](#). The company aims to become a priority source of data, analytical information, and recommendations for Kazakhstan's oil, gas, and electric power industries, allowing decision-makers to analyze and predict the most significant industry indicators with details on leading market players. Activities of ENERGY Insight & Analytics incorporate the whole analytics cycle with consequent stages: Descriptive, Diagnostic, Predictive, and Prescriptive analytics.

The key tool and product of ENERGY Insight & Analytics is internally developed software - [the Analytical Platform EXia](#), aimed to identify, localize, format, and present data most efficiently for the specified use cases.

The KAZENERGY Association serves as an effective platform for businesses and government agencies to coordinate decisions aimed at enhancing the investment attractiveness of the industry, advancing geological exploration and the discovery of new fields, boosting oil production, developing the gas sector, and fostering new phases in the petrochemical industry. To support these goals, ENERGY Insight & Analytics has been engaged, with the intention of transforming it into a think tank for the oil and gas sector.

At the second National Kurultai «Adilette Kazakhstan - Adal Azamat» on June 17, 2023, the President of Kazakhstan criticized the current interaction between government agencies and domestic think tanks and consulting firms, emphasizing the need for a robust network of expert and analytical centers capable of delivering high-quality and relevant intellectual products.

In full support of the President's initiative, the founders of ENERGY Insight & Analytics share the view that having domestic analytical expertise – an independent expert perspective for both government agencies and Kazakhstani businesses – will help safeguard and strengthen Kazakhstan's national security, while also enabling timely and targeted efforts to address industry challenges.

ENERGY Insight & Analytics was established with the aim of becoming a leading source of data, analysis, and recommendations on Kazakhstan's oil, gas, and electric power industries, as well as the broader Caspian region. This will provide decision-makers with tools to analyze and forecast key industry indicators based on input from the sector's most significant players.

Mission:

To help Decision Makers²⁹, analysts and all stakeholders in obtaining comprehensive information on the Oil&Gas and electric power industries to improve the quality and efficiency of decision-making.

Purpose:

To create a priority source of data, analytical information and recommendations on the Oil&Gas and electric power industries of Kazakhstan, which will allow Decision Makers to analyze and predict the most significant industry indicators with details on leading market players.

Vision:

A key expert and analytical center of the Oil&Gas and electric power industries of the Republic of Kazakhstan, integrated into the national network of think tanks, providing comprehensive research and verified recommendations prepared based on qualitative data and best applicable practices.

²⁹ O&G and energy companies, oilfield services, asset management holdings, information agencies, investment banks, development financial institutions

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