ҚазМұнайГаз
NATIONAL COMPANY ҰЛТТЫҚ КОМПАНИЯСЫ

ANNUAL REPORT 2021

#LEVERAGING OUR STRENGTHS

Leveraging our strengths...

KMG is Kazakhstan's leading vertically integrated oil and gas company operating assets across the entire production cycle from exploration and production of hydrocarbons to transportation, refining and provision of services. Full integration across the value chain represents a solid foundation for our sustainable development in the long term.

unique geography

cutting-edge refineries

exploration

production

refining

full#i

high-potential upstream portfolio

midstream capacity

...keeping the lead...

#1

KAZAKHSTAN'S

- in oil production
- in oil transportation
- in oil refining

efficient management

financial stability

midstream

marketing

ntegration

growth

commitment to ESG principles

...thinking about the future

Confident about our future, we set new goals, refine the governance system, maintain financial strength, and incorporate sustainable development principles across the value chain

KMG has
a diversified portfolio of oil
and gas production assets
with an attractive upside potential.

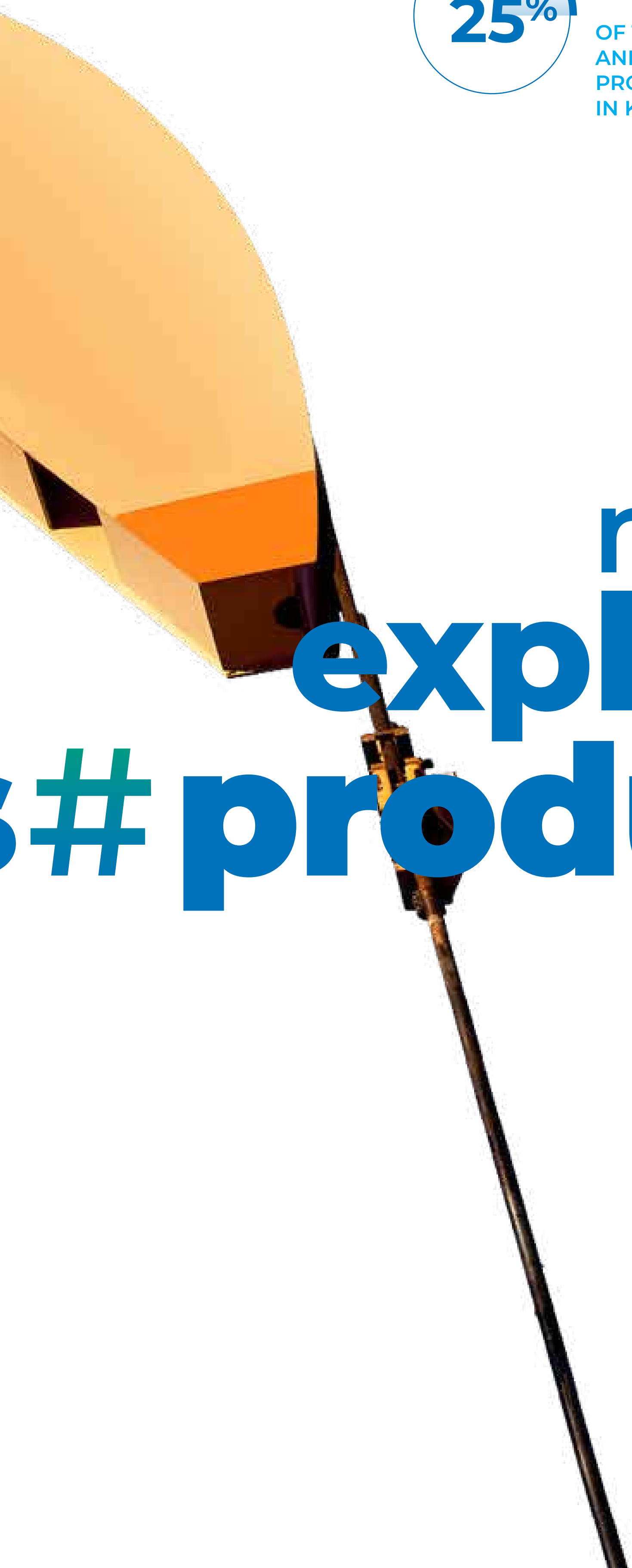
ambitious

commercial

high-tech

organic growth

unique feedstock



25% OF TOTAL OIL AND CONDENSATE PRODUCTION IN KAZAKHSTAN

15% OF TOTAL GAS PRODUCTION IN KAZAKHSTAN

refining

midstream

marketing

exploration

#production

2031 GOAL

Total oil output
240 mln tonnes

The Company operates four largest refineries in Kazakhstan and two in Romania; the facilities have been comprehensively modernised.

deep

vertically integrated

state-of-the-art

sustainable

largest refineries

#

82%

KMG'S REFINING MARKET

SHARE THROUGH HOLDINGS IN ALL OF KAZAKHSTAN'S MAJOR MODERN REFINERIES

midstream

marketing

exploration

production

refining

2031 GOAL

BRING REFINING DEPTH AT KAZAKH REFINERIES TO 89%

The Company’s oil transportation system is highly diversified and has strong transit and export potential.

56%

SHARE OF THE OIL TRANSPORTATION MARKET

marketing
exploration
production
refining
midstream

2021 ANNUAL REPORT OF JSC NC KAZMUNAYGAS

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STRATEGIC REPORT

KMG'S STRATEGY IS DEVELOPED BASED ON THE COMPANY'S RESPONSIBILITY TO BOTH CURRENT STAKEHOLDERS AND FUTURE GENERATIONS.

COMPANY OVERVIEW

SCOPE OF OPERATION

JSC National Company KazMunayGas (“KMG”, the “Company”) is Kazakhstan’s leading vertically integrated oil and gas company, operating assets across the entire production cycle from exploration and production of hydrocarbons to transportation, refining and provision of services. Established in 2002, the Company represents the interests of the Republic of Kazakhstan in the national oil and gas industry.

CAPITAL STRUCTURE

KMG is owned by Sovereign Wealth Fund Samruk-Kazyna Joint-Stock Company (“Samruk-Kazyna”, the “Fund”) (90.42%) and the National Bank of Kazakhstan (“NBK”) (9.58%), which transferred its shares to the trust management of the Fund on 12 October 2015.

Samruk-Kazyna is a sovereign wealth fund with the Government of the Republic of Kazakhstan as its sole shareholder. The Fund’s mission is to improve the sovereign wealth of the Republic of Kazakhstan and ensure long-term sustainability for future generations. The Fund’s portfolio includes companies operating in the oil and gas, transport, logistics, chemical, nuclear, mining and metals, energy and real estate industries.

GOVERNMENT OF THE REPUBLIC OF KAZAKHSTAN

9.58%

NATIONAL BANK OF KAZAKHSTAN

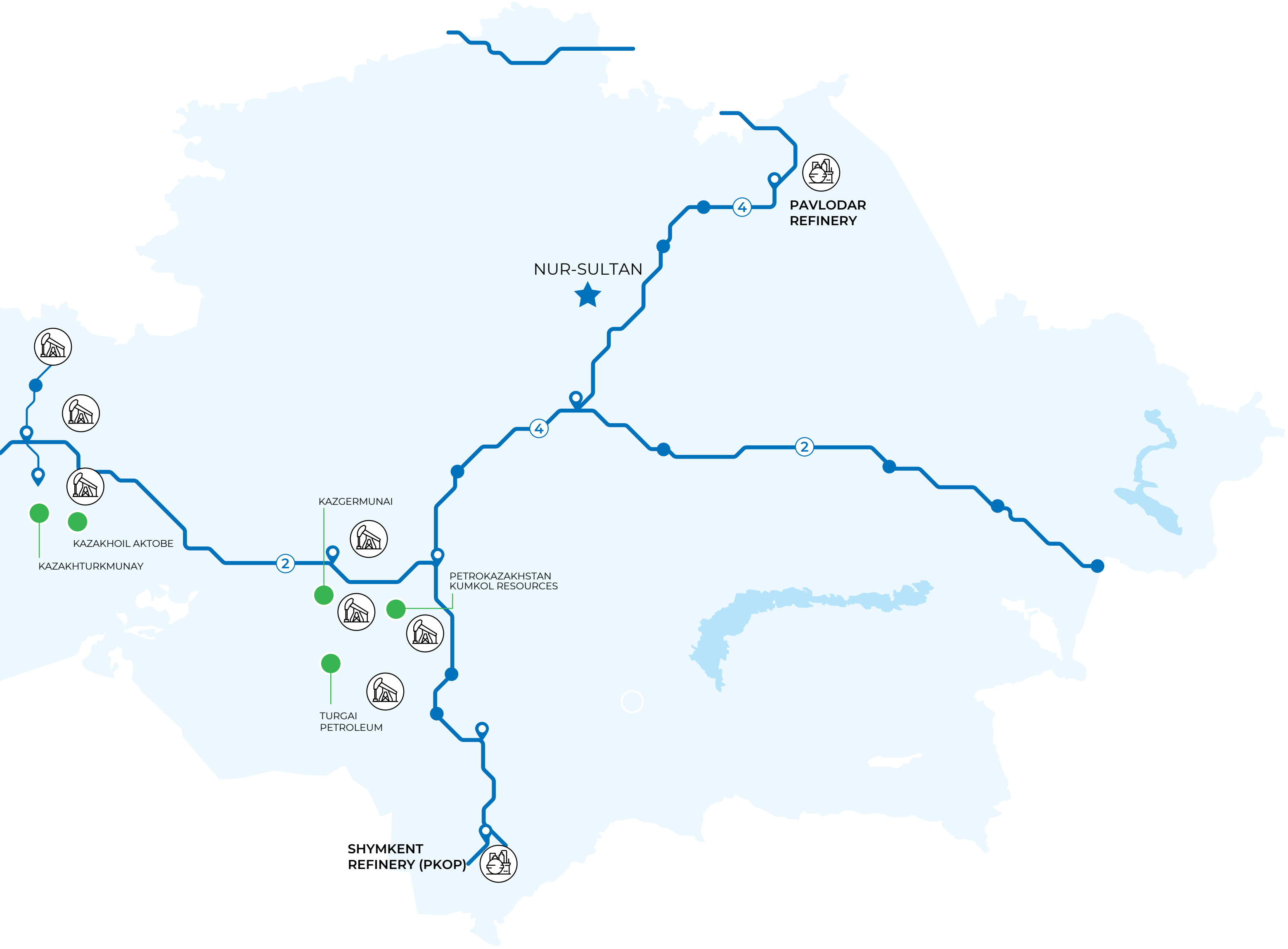
90.42%

SAMRUK-KAZYNA»

GEOGRAPHY

1. MunayTas North-West Pipeline Company LLP
2. Kazakhstan-China Pipeline LLP
3. Caspian Pipeline Consortium
4. JSC KazTransOil

KEY INDICATORS



OPERATING PRODUCTIONS ASSETS
MEGAPROJECTS
Oil pumping station
Head oil pumping station

OPERATIONAL OIL PIPELINE
EXPLORATION AND PRODUCTION
REFINING

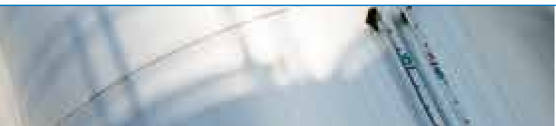
645
MLN TOE
PROVED PLUS PROBABLE RESERVES (2P)

21.7
MLN TONNES
OIL AND CONDENSATE PRODUCTION

8.1
BLN M³
GAS PRODUCTION

74.6
MLN TONNES
OIL TRANSPORTATION

18.9
MLN TONNES
OIL REFINING



ASSET STRUCTURE

The material assets of KMG include

UPSTREAM

OPERATING ASSETS:

100%
OzenMunaiGas (OMG)
Embamunaigaz (EMG)
Kazakhturkmunay (KTM)
KazMunayTeniz
Urikhtau Operating (UO)

50%
Mangistaumunaigaz (MMG)
Kazgermunai (KGM)
Karazhanbasmunai (KBM)
Kazakhoil Aktobe (KOA)

33%
PetroKazakhstan Inc. (PKI)

MEGAPROJECTS:

20%
Tengizchevroil (TCO)

10%
Karachaganak (KPO) – 10%

8.44%
Kashagan (NCOC)[1]

MIDSTREAM

100%
Kazmortransflot (KMTF)

90%
KazTransOil (KTO)

100%
Batumi Oil Terminal

51%
MunaiTas

50%
Kazakhstan–China Pipeline

50%
KazRosGas

20.75%
Caspian Pipeline Consortium (CPC)[2]

REFINING

100%
Pavlodar Refinery
KMG International

54.63%
Petromidia Refinery

54.63%
Vega Refinery

99.53%
Atyrau Refinery

49.72%
Shymkent Refinery (PKOP)

50%
Caspi Bitum

[1] In October 2015, Samruk-Kazyna acquired a 50% stake in Kashagan with a right to purchase shares under an option agreement in 2020 and 2022. KMG and Samruk-Kazyna jointly hold 16.88% in Kashagan.

[2] 19% held via KMG and 1.75% held via Kazakhstan Pipeline Ventures (KPV).

OILFIELD SERVICES

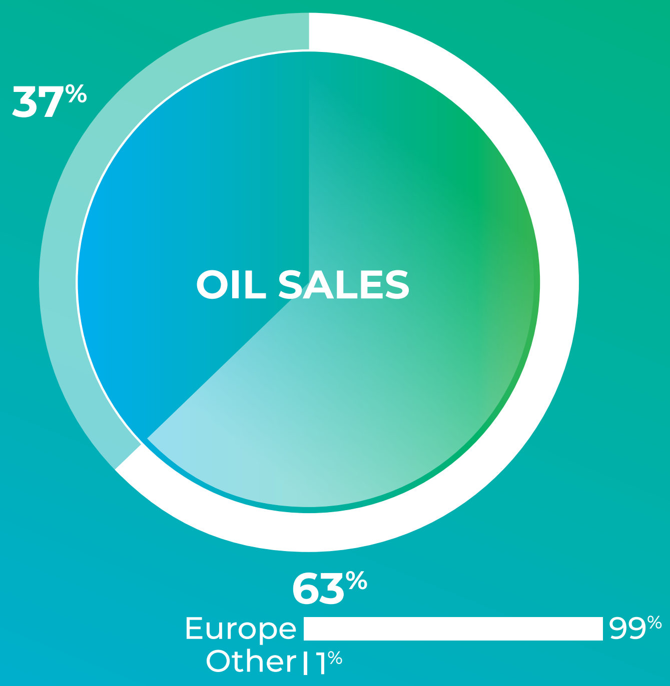
100%
KMG Systems & Services

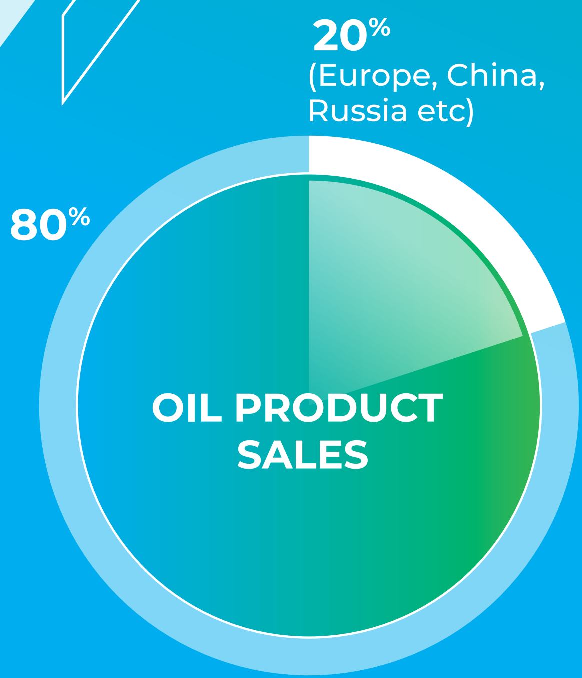
49%
KMG Nabors Drilling Company
KMG Parker Drilling Company
KMG Automation

48.996%
TenizService

KEY MARKETS

Exports
Domestic market





BUSINESS MODEL

COMPETITIVE ADVANTAGES

Unique geography
Kazakhstan has an extensive resource base, favourable location, and a unique opportunity to export to Europe and fast-growing Asian markets

Full integration across the value chain
KMG is the national leader in Kazakhstan's oil and gas industry with a fully integrated value added chain

Financial stability
The company maintains its financial stability and provides sufficient conditions for its long term development

Differentiated upstream portfolio
KMG has a diversified portfolio of oil and gas production assets with an attractive growth potential

Leading position in Kazakhstan's oil midstream sector
KMG has a 56% share of Kazakhstan's oil transportation market

Advanced oil refineries
The Company operates the four largest refineries in Kazakhstan and two in Romania

Advanced corporate governance framework and commitment to sustainability principles
Sustainable development is a strategic priority for KMG

INTEGRATED VALUE

HYDROCARBON EXPLORATION AND PRODUCTION

RESOURCES

PROVED PLUS PROBABLE RESERVES (2P)
645 MLN TOE
4,983 MLN BOE

OIL AND CONDENSATE PRODUCTION
21.7 MLN TONNES
444 KBOPD

GAS PRODUCTION
8.1 BLN M^3

EBITDA

2,445 USD MLN
65%

STRATEGIC GOALS TO 2031

INCREASE IN RESERVES
+299 MLN TONNES

TOTAL OIL OUTPUT IN TEN YEARS
240 MLN TONNES

ADDED CHAIN

OIL TRANSPORTATION

OIL TRANSPORTATION
74.6 MLN TONNES

TRANSPORTATION

Pipeline
64.7 MLN TONNES

Marine
9.9 MLN TONNES

LENTH OF OIL PIPELINES
5,372 KM

496 USD MLN

13%

- INCREASING THE UTILIZATION OF THE CREATED CAPACITIES
- SEA TRANSPORTATION SYNERGY

REFINING AND SALE OF CRUDE OIL AND OIL PRODUCTS

OIL REFINING
18.9 MLN TONNES

REFINING

in Kazakhstan
13.9 MLN TONNES

in Romania
4.9 MLN TONNES

679 USD MLN

18%

- IMPLEMENTATION OF THE PLANNED PETROCHEMICAL PROJECTS
- INCREASING THE DEPTH OF OIL REFINING AT KAZAKH REFINERIES UP TO **89%**

VALUE

STAKEHOLDER

Leadership and presence across all sectors of Kazakhstan's oil and gas industry, from exploration to product sales, enable KMG to create value for a wide range of stakeholders. KMG makes regular payouts to shareholders, duly meets its obligations to investors and creditors and is a major employer and taxpayer. The Company promotes mutually beneficial cooperation with partners, invests in social projects and ensures high standards of environmental protection:

DIVIDENDS TO SHAREHOLDERS
56 BLN TENGE

TAXES AND OTHER MANDATORY PAYMENTS TO THE NATIONAL BUDGET
787 BLN TENGE

PERMANENT JOBS
>47 THOUS. JOBS

SOCIAL ASSISTANCE TO EMPLOYEES
22 BLN TENGE

SOCIAL INVESTMENTS UNDER SUBSOIL USE CONTRACTS
5 BLN TENGE

PROCUREMENT VOLUME
1,216 BLN TENGE

THE SHARE OF LOCAL CONTENT
78%

PERFORMANCE HIGHLIGHTS

Financial highlights[1]

EBITDA, USD mln

'21	5,126
'20	1,960
'19	3,776

Revenue, USD mln

'21	13,705
'20	8,767
'19	17,915

Share in the earnings of joint ventures and associates, USD mln

'21	1,804
'20	680
'19	2,163

Net profit, USD mln

'21	2,810
'20	416
'19	3,026

CAPEX on an accrual basis, USD mln

'21	972
'20	1,098
'19	1,320

CAPEX on a cash basis, USD mln

'21	962
'20	959
'19	1,160

Net debt, USD mln

'21	5,104
'20	6,162
'19	6,171

Free cash flow, USD mln

'21	1,570
'20	121
'19	1,537

Net debt / EBITDA, coefficient, USD mln

'21	1.35
'20	3.14
'19	1.20

Operational highlights

2P hydrocarbon reserves, mln tonnes

'21	645
'20	635
'19	676

Oil and gas condensate production, ths tonnes

'21	21,651
'20	21,752
'19	23,618

Natural and associated gas production, mln m^3

'21	8,081
'20	8,191
'19	8,455

Oil transportation, ths tonnes

'21	74,565
'20	73,171
'19	78,066

Gas transportation, mln m^3

'21	81,851
'20	86,590
'19	103,494

Oil refining, ths tonnes

'21	18,883
'20	18,077
'19	20,588

[1] 2021 and 2020 data reflects the transfer of 100% of shares held by JSC KazTransGas (JSC NC QazaqGaz) to Samruk-Kazyna on 9 November 2021.

[2] In 2020, the Company revised its methodology to calculate the actual headcount (by including employees from consolidated companies with an ownership interest of 51% or above). The 2019 data was also recalculated.

Social highlights

Actual headcount[2]

‘21	47,437
‘20	60,173
‘19	61,587

Lost Time Incident Rate (LTIR)[3]

‘21	0.31
‘20	0.29
‘19	0.34

Fatal Accident Rate (FAR)[3]

‘21	2.93
‘20	0.0
‘19	1.48

Environmental highlights

NOx emissions, tonnes per 1,000 tonnes of produced hydrocarbons

‘21	0.24
‘20	0.22
‘19	0.21

SOx emissions, tonnes per 1,000 tonnes of produced hydrocarbons

‘21	0.22
‘20	0.23
‘19	0.20

APG flaring rate, tonnes per 1,000 tonnes of produced hydrocarbons

‘21	2.1
‘20	2.2
‘19	2.95

[3] LTIR and FAR coefficients are presented without taking into account JSC KazTransGas (JSCNC QazagGaz) to compare numbers for 2021 with indicators for 2019 and 2020 in the right way. At the same time, taking into account JSC KazTransGas numbers, the LTIR and FAR indicators amounted to 0.31 and 1.28 in 2019 and 0.25 and 0.0 in 2020, respectively.

STATEMENT FROM THE CHAIRMAN OF THE BOARD OF DIRECTORS

Dear investors, shareholders, colleagues and partners,

2021 was a busy year for the Company, the nation, and the world at large. As pandemic-related restrictions were eased, we saw a rapid recovery in international business activity, which had a positive impact on a number of social and economic indicators of the global economy and the oil and gas industry in particular. In 2021, KMG improved its performance in a wide range of areas. On a positive side note, growing vaccination rates have led to reduced coronavirus morbidity and mortality. However, the fight against the pandemic is still ongoing.

KMG's new strategy

The pandemic, which started in 2020, today's global challenges, and domestic developments have caused the Company to rethink its activities, key priorities, and contribution to the lives of people. As the leader in the oil and gas industry of Kazakhstan and a representative of government interests, KMG is aware of its growing responsibility to all existing stakeholders as well as future generations. In the reporting year, we have updated our development strategy and strategic objectives for the next ten years. As part of its strategic goals, the Company aims to expand its resource base, improve operational efficiency, add new products to its production portfolio, engage in sustainable development, and consistently reduce carbon intensity of production. In November 2021, KMG's gas transportation and marketing business was transferred to JSC Samruk-Kazyna, the Company's key shareholder, as a way to give an impetus to the gas industry in Kazakhstan. As part of diversification efforts, KMG retains its focus on petrochemicals as a promising area of business.

Maintaining its conventional activities in hydrocarbon production, the Company plans to grow reserves both organically and inorganically through further exploration at existing fields and new exploration. Also, KMG has strong partnerships with international oil and gas majors.

To improve operational efficiency, the Company's focus in hydrocarbons is to stabilise oil production at operating assets, start commercial production at new fields, and implement production expansion and plateau extension projects at large oil and gas fields. In oil transportation, we plan to increase existing capacity utilisation by maintaining oil transit volumes, supplying oil to the refineries in Pavlodar and Shymkent, and ramping up volumes of export to China. The core objective of our upgraded refineries is to improve refining depth and grow the output of high-margin petrochemicals in Kazakhstan while also enhancing vertical integration across the assets of KMG International. We also have a lot to do to optimise our marketing, procurement, and finance.

We continue to rapidly grow the petrochemical business in order to diversify activities and stabilise future cash flows, which will act as the Company's value driver. A polypropylene plant of KPI Inc. is scheduled for launch in 2022, and there are projects to engage in production of butadiene and polyethylene as part of strategic partnerships with international oil and gas companies going forward.

We retain a very special focus on sustainable development. Our updated strategy provides a more explicit message about the importance of sustainability and adds aphased reduction in carbon intensity of production to our agenda. We have now defined specific objectives to be overseen by the Board of Directors, both as part of regular meetings with officers in charge and by having respective targets included into key performance indicators (KPIs).

The Board of Directors takes very seriously any feedback from the Management Board and other officers to develop the right approaches and set new objectives to help take timely steps that will benefit the Company and society at large.

Recovery in global business activity

In 2021, recovery in global oil demand and efforts by OPEC+ were the key drivers that pushed oil prices up. The average annual price of Brent crude oil was USD 71 per bbl, an increase of 70% year-on-year and a record high over the past three years. On the back of the upward trends of 2021, KMG's net profit went up to KZT 1,207 bln, with free cash flow reaching KZT 669 bln. A major driver that supported our improved financial performance was the ongoing efforts to optimise costs across the board, a measure initiated as part of the Company's crisis response programme in 2020.

Sustainable development

To ensure the Company's sustainable development, the Board of Directors initiates and oversees efforts to have sustainability firmly embedded into KMG's key business processes. We want employees to understand high standards of sustainability and rely and act on them in everything they do. In 2020, for the first time ever, the Company included ESG rating in the list of corporate KPIs for Management Board members. In the reporting year, we revised the target upwards and also included progress against specific sustainability projects into our corporate KPIs. As part of this momentum to enhance the role of ESG across the Company, we added a LTIR (Lost Time Incident Rate) reduction target to our KPIs for 2022. The Sustainalytics international rating agency improved the Company's ESG risk rating from 34.5 to 28.4, reaffirming KMG's strong positions in managing material ESG risks in the global oil and gas market.

In the reporting year, the Board of Directors approved the Low-Carbon Development Programme. The document outlines KMG's existing opportunities to reduce its carbon footprint through improved energy efficiency and resource management and describes additional focus areas for decarbonisation using renewable energy sources (RES), CO_2 capture, utilisation and storage, forest carbon projects, and hydrogen production. We also set preliminary targets to achieve a 15% reduction in greenhouse gas emissions by 2031 from the 2019 level, which is equivalent to 1.6 mln tonnes of CO_2. To have the Programme successfully implemented, KMG established a project office on low-carbon development, with competent professionals engaged to that end.

In 2021, KMG underwent a review of its corporate governance, initiated by its key shareholder JSC Samruk-Kazyna. Following the review, KMG was assigned a “BBB” corporate governance rating, a major improvement on the “BB” rating assigned in 2018. The results show that some of the positive trends include major enhancement in the efficiency of the Board of Directors and the executive body, risk management, internal control and audit, and sustainable development.

This is a testament to the exceptionally successful and consistent efforts to improve the Company's corporate governance. We are confident that we have chosen the right path.

Caring about people

Treating the lives and health of its employees as a priority compared to operating performance, KMG uses a zero-tolerance approach to accidents related to work. In the reporting year, the number of accidents related to work declined from 30 to 28 year-on-year.

However, I am sorry to say that in the reporting year, there was a fire at the Petromidia Refinery in Romania that claimed the lives of three people. I would like to convey the Company’s condolences to the families and friends of the victims.

Caring about people goes beyond our employees. KMG plays an active role in developing its regions of operations and providing social support to vulnerable population groups.

In 2021, we allocated more than KZT 5 bln to social infrastructure, including utilities, sports and healthcare facilities, and more.

Conclusion

While 2021 saw a recovery in business activity, in 2022 the global community has been exposed to geopolitical developments, which have already begun to affect businesses globally. As a result, there are risks for the oil and gas industry in the region and for the Company's operations. Pursuing a pragmatic approach, we have been consistently working to ensure long-term development, reduce leverage, upgrade our production assets, improve infrastructure, and diversify across the board. KMG has a strong track record of operating in turbulent environments and has been making use of its experience to foster sustainability at the present time. We have every confidence in our future performance and we are ready to quickly adjust to the ever changing conditions in the oil and gas business.

Christopher Walton,
Chairman of the Board of Directors
of JSC NC KazMunayGas

STATEMENT FROM THE CHAIRMAN OF THE MANAGEMENT BOARD

Dear sharegolders, investors and partners!

As the leader of Kazakhstan's oil and gas sector and a key contributor to the country's social and economic well-being, KMG is committed to long-term development with a clear focus on people, environment, and development of the regions where it operates.

Gradually recovering our performance

With the recovery in global business activity, the Company saw its performance returning to pre-pandemic levels. As OPEC+ restrictions were gradually lifted in 2021, we were able to raise our oil and gas condensate production to 21.7 mln tonnes or 444 kbopd, which is virtually equivalent to the volumes of 2020 when OPEC+ restrictions were introduced only in the second quarter.

The total oil transportation by pipeline and by sea cumulatively increased by 1.9% to 74.6 mln tonnes. The growth came on the back of higher volumes delivered by pipelines to Kazakhstan refineries for domestic refining as well as greater tonnages of marine transportation, predominantly in the Mediterranean where the Company's tankers most strongly benefited from the oil shipping market recovery.

Kazakhstan refineries raised their refining volumes by 8.4% to 13.9 mln tonnes, as they fully regained their pre-pandemic levels thanks to higher domestic demand for oil products. However, the processing of hydrocarbon feedstock at our refineries in Romania saw a 6.1% decline to 4.9 mln tonnes following a three-month shutdown of Petromidia Refinery because of a fire at the refinery's diesel hydrotreating plant in July 2021.

The reporting year witnessed a remarkable improvement in our financial performance mainly off the back of a rise in the average oil price and higher income from the share in profits of our joint ventures and associates. EBITDA totalled KZT 1,609 bln vs KZT 810 bln in 2020. The Company's net profit climbed to KZT 1,197 bln while the free cash flow amounted to KZT 669 bln. Importantly, the Company's net debt as of the year end totalled KZT 2,204 bln, down 15% year-on-year from KZT 2,594 bln.

Implementing strategic initiatives

As part of our development strategy updated in 2021, the Company is focused on intensifying efforts to grow hydrocarbon reserves through prospective exploration projects, including new and follow-up exploration. KMG made notable progress in its exploration initiatives. The East Zhetybai field produced 38 tonnes per day in a gushing flow of Jurassic oil. The oil flow at the South Zhetybai field was 36 tonnes per day. New oil deposits were found during follow-up exploration at Uzen in the Mangystau Region. As a result, the recoverable reserves grew by 39.9 mln tonnes. Subsoil use licence was acquired with respect to the Al-Farabi project in the Kazakhstan section of the Caspian Sea, implemented as part of a partnership with carry financing.

As part of diversification efforts, KMG retains its focus on petrochemicals as a promising area of business. In late 2021, the construction of a polypropylene plant with a 500 ths tonnes capacity was completed at the KPI Inc.'s gas chemical complex and the facility received the first batch of propane from the Tengiz field. We proceeded to the design stage of the project for the production of polyethylene with a capacity of 1,250 ths tonnes.An investment project to produce 180 ths tonnes of butadiene rubbers is also underway in the Atyrau region. The project will create 700 new jobs.

In November 2021, we consummated a deal to transfer our subsidiary, KazTransGas (renamed later as QazaqGaz), to our majority shareholder Samruk-Kazyna for independent implementation of gas projects. It should be noted that following the transfer of KazTransGas the Company retained its investment grade ratings.

Environmental safety efforts

The Company succeeded in cutting its air emissions by 19% vs 2017. We are doing a lot to manage our crude and refined oil waste disposal and remediate oil-contaminated lands, including legacy ones.

KMG continues to implement several socially oriented and environmental projects. The Company constructs a desalination plant at the Karazhanbas field, which is expected to add 17 ths m^3 of water per day for use by the local community. In 2023, we plan to complete the construction of a 50 ths m^3 per day desalination plant in Kenderly to cover the water consumption deficit in Zhanaozen. Another important project is the reconstruction of the “Astrakhan–Mangyshlak” water pipeline, which will increase the throughput from 110 to 170 ths m^3 per day and will cover current and future industrial and community needs in fresh water of the Atyrau and Mangystau regions. We continue the construction and installation as part of the TAZALYQ project intended to improve the environment in Atyrau through a 10% cut in water withdrawal from the Ural river, with Atyrau Refinery expected to reuse 15% of its treated effluents.

In 2021, KMG entered into a number of agreements with major global companies to support the development of green technologies. We plan to cooperate with Eni in developing energy transition projects for generating and selling energy from renewable sources. The Company is considering a pilot project of carbon capture, utilisation and storage (CCUS) jointly with Shell. This technology is an important method of cutting emissions across the energy system. Linde and KMG are exploring the opportunity of producing hydrogen and ammonia using natural gas as feedstock.

Social responsibility

The Company's development is inseparable from decent working conditions for its employees. In personnel development, we promote meritocracy and fairness, provide equal opportunities and assess each employee's contribution to achieving common goals. Wages and salaries are subject to annual indexation in line with inflation.

In accordance with collective bargaining agreements, KMG provides 35 types of social support for employees, their families, and non-working retirees. The Company increased its investments in employee social support from KZT 21 bln in 2020 to KZT 22 bln in 2021.

We make efforts to reduce the wage gap between our and contractors' employees, the latter have a bonus scheme and guaranteed social package. This resulted in significant employee pay rises across our contractors. In addition, at the beginning of 2022 KMG has increased wages in corporate centre by 10% and up to 30% within its footprint.

Among other things, favourable employment conditions include high standards of health and safety, which is a priority across KMG operations. CEOs of subsidiaries are personally responsible for ensuring industrial safety at their assets. To strengthen control over fire safety requirements in 2021, a comprehensive plan for 2022-2024 was developed. A pilot project "Travel Management" was implemented at Embamunaigas to improve the level of transport security, create a culture of safe driving and a single centralised digital platform, which is planned to be replicated to other subsidiaries and affiliates from 2022. It is also worth noting that the Company takes measures to fight the COVID-19 pandemic. As at the end of 2021, over 50 thousand employees of the Group were immunised, including 73% of employees with the full course of vaccination.

In 2021, KMG, as a major taxpayer, paid KZT 787 bln as taxes and other compulsory payments to the national budget. KZT 56 bln was distributed as dividends to shareholders.

Conclusion

2021 showed that the Company can keep the balance between stability and development of new activities while maintaining a responsible approach to people and environment.

Alik Aidarbayev,
Chairman of the Management Board of JSC NC KazMunayGas

STRATEGY

MARKET OVERVIEW

Macroeconomics and global trends

Global trends and their impact on strategy implementation

GLOBAL TRENDS

Challenge for the industry

- Recovery in global demand and oil prices.
- Slowdown in renewable energy sources expansion within the energy balance
- Record-high gas prices – soaring Chinese demand and Europe's energy crisis.
- Long-term growth in demand for petrochemicals.

Changes in the global energy balance

Strategic responses to trends

- Supporting OPEC+ measures, improving production efficiency
- Transferring JSC KazTransGas to JSC Samruk-Kazyna
- Expanding the value chain within the existing business and developing the petrochemical segment.

- Accelerated growth and use of digital technologies.
- Business process digitisation and automation

- The growing importance of sustainability and ESG financial instruments across the investment community.

- The trend towards carbon neutrality in the oil and gas sector.

Digitalisation

Sustainable development and ESG

Alternative energy sources, carbon neutrality

- Digitalisation focusing on specific issues in business processes, with an emphasis on Exploration and Production and on Refining, as well as development of targeted solutions across KMG Group.

- Integrating sustainability principles into key business processes.

- Promoting a low-carbon approach.

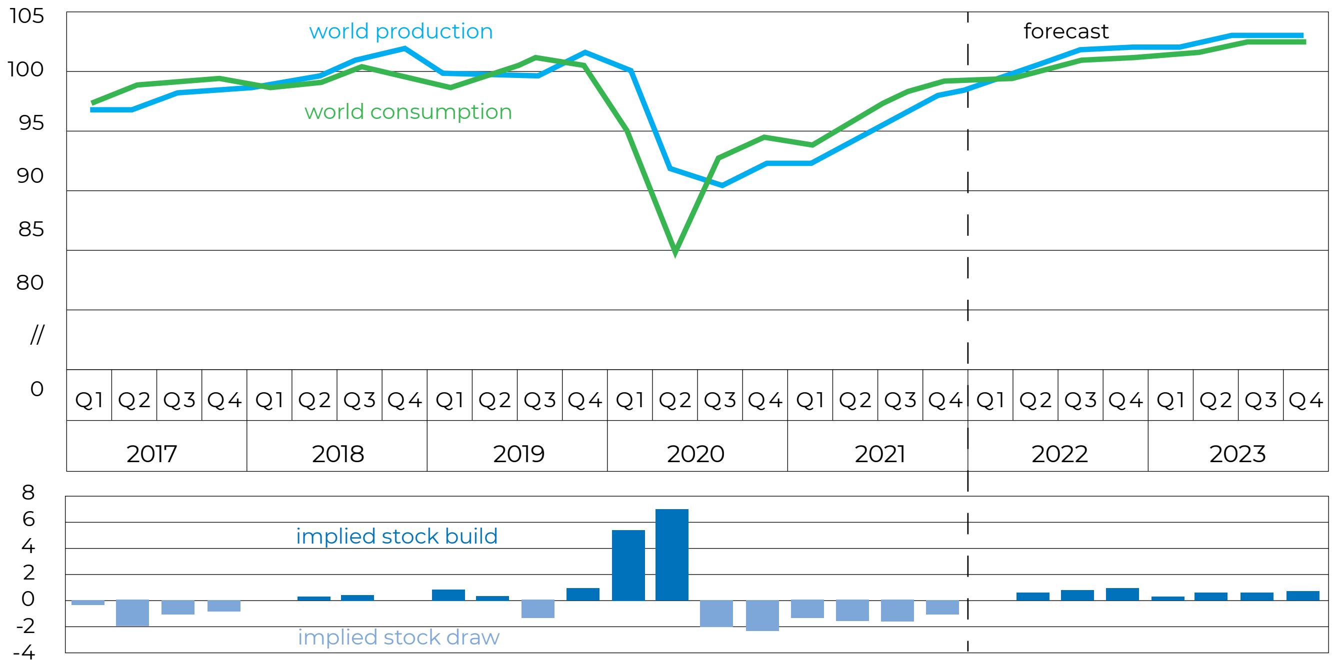
1. Recovery in global demand and oil prices

In 2021, the demand for liquid fuels outstripped the supply in the production and consumption balance, which was due to a relative recovery in tourist flows and air transportation coupled with the global economy being unshackled from the major restrictions of the prior year.

According to the U.S. Energy Information Administration (EIA), the average liquids consumption in 2021 amounted to 96.9 mln bbl per day, up 5.0 mln bbl compared to 2020 with its significantly lower consumption due to COVID-19.

For more than a year, oil consumption was ahead of production due to cuts under the OPEC+ agreement, restricted investment on the part of US oil producers, and other supply disruptions, which also led to constant release of oil stockpiles around the world and a spike in oil prices.

World liquid fuels production and consumption balance, mln bbl per day



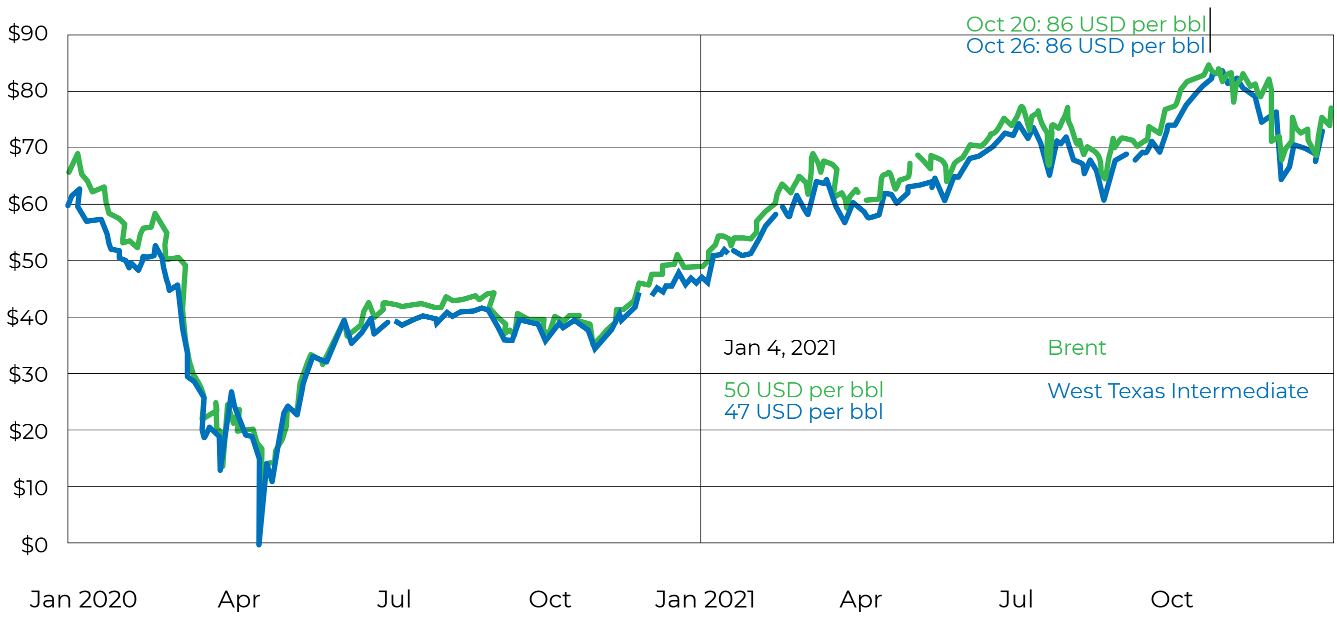
Source: U.S. Energy information Administration, Short-Term Energy Outlook, January 2022

Brent crude traded at an average of USD 70.86 per bbl in 2021, up 70% year-on-year amid the easing of pandemic-related restrictions. In 2021, the U.S. Energy Information Administration (EIA) recorded the highest average annual Brent crude price in the last three years.

It was USD 50 per bbl at the start of the year and peaked at USD 86 per bbl at the end of October, reflecting the December 2020 decision by OPEC+ to limit production growth in 2021 in order to support higher prices. By the end of the year, there was a price increase precipitated in part by fears around the Omicron variant causing oil consumption drop-off, followed by a decrease when the variant turned out to be less dangerous, but more contagious.

The West Texas Intermediate (WTI) crude price mirrored Brent, trending USD 3 per bbl lower on average.

Daily spot crude oil prices (Jan 2, 2020-Dec 30, 2021) USD per bbl



Source: Graph by the U.S. Energy Information Administration, based on data from Refinitiv

Strategic direction

KMG generally improves the efficiency of its production assets, supports OPEC+ measures to recover oil demand, and takes care to prepare for low oil prices and global economy deterioration.

2. Slowdown in renewable energy sources expansion within the energy balance

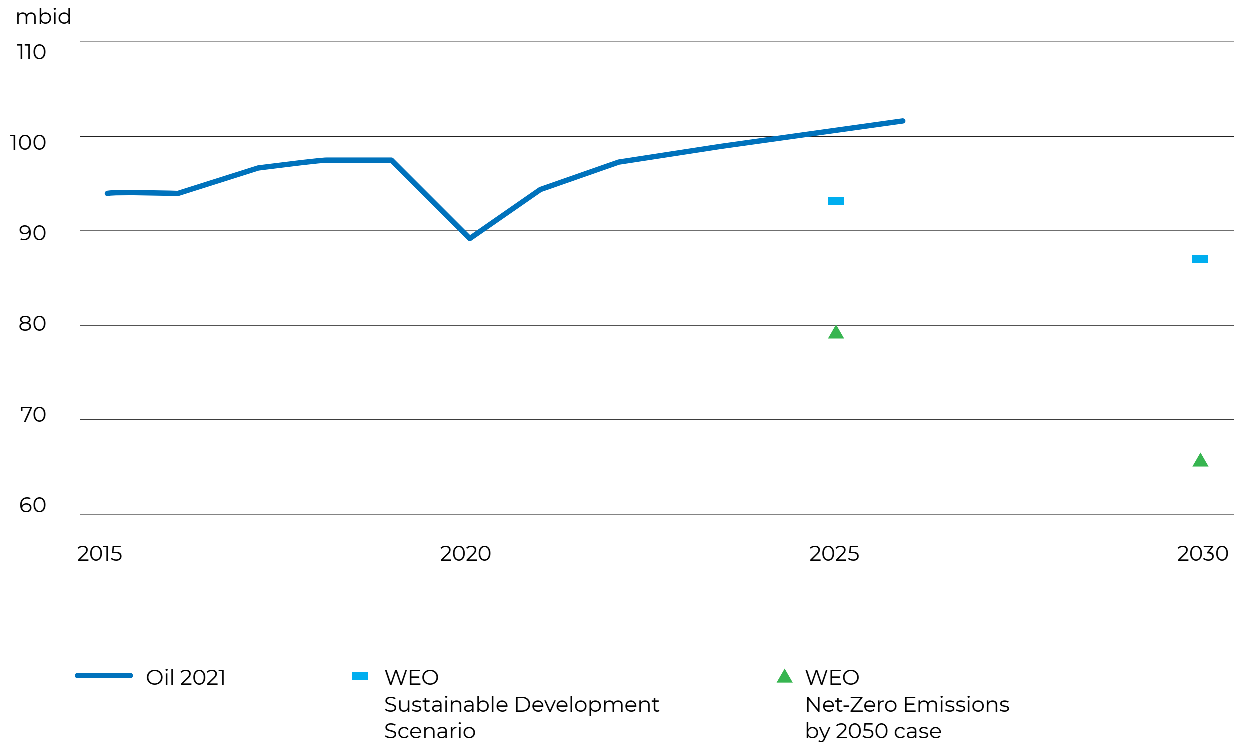
Despite the headway made in renewable energy, 2021 saw a substantial increase in the use of coal and oil. Fast, patchy economic recovery following the COVID-19-induced recession puts intense pressure on the energy system, which leads to sharp rises in the price of natural gas, coal, and electricity. This is also the cause of the second-largest annual increase in CO_2 emissions ever recorded (from 31.5 ths tonnes in 2020 to 33 ths tonnes in 2021).

This trend is a far cry from the Net Zero Emissions by 2050 Scenario modelled in the 2021 World Energy Outlook (WEO) by the U.S. Energy Information Administration (published in May 2021). The scenario envisions a pathway for the global energy sector to achieve net zero CO_2 emissions by 2050 while limiting the global temperature rise to 1.5 °C without a temperature overshoot. The EIA report is the world's first comprehensive study focusing on a way to achieve a clean and sustainable energy economy by 2050 with renewables as the primary source.

For WEO-2021, several scenarios were modelled based on global economy development:

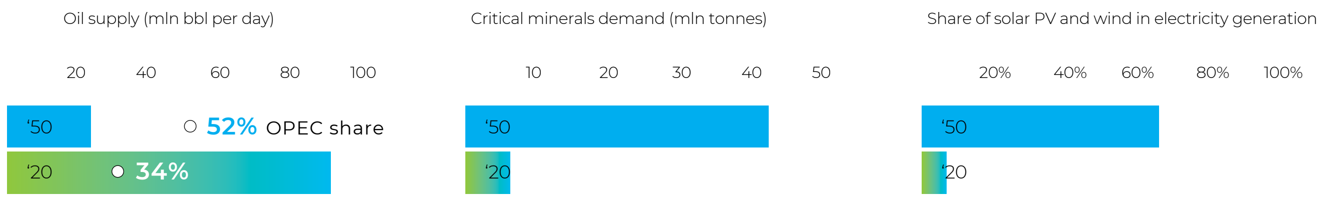
- Net Zero Emissions by 2050 Scenario (NZE) – a normative IEA scenario of achieving net zero CO_2 emissions by 2050, with advanced economies reaching net zero emissions sooner than others. This scenario also meets key energy-related United Nations Sustainable Development Goals (SDGs).
- Stated Policies Scenario (STEPS) – takes account of existing policies and measures, as well as those that are under development. Under the scenario, CO_2 emissions remaining on the current trajectory will lead to a global temperature rise of 2.7 °C by 2100 (with a 50% probability).
- Announced Pledges Scenario (APS) – assumes all announced net zero ambitions and targets are on the path to deliver the necessary emissions reductions, regardless of whether these have been anchored in any concrete policies. Under the scenario, CO_2 emissions remaining on the current trajectory will lead to a global temperature rise of 2.1 °C by 2100 (with a 50% probability).
- Sustainable Development Scenario (SDS) – a "well below 2 °C" pathway to the outcomes targeted by the Paris Agreement.

Global oil demand forecast in scenarios of Oil 2021, sustainable development and net-zero emissions by 2050



Source: U.S. Energy Information Administration

Global energy security indicators in the net zero pathway



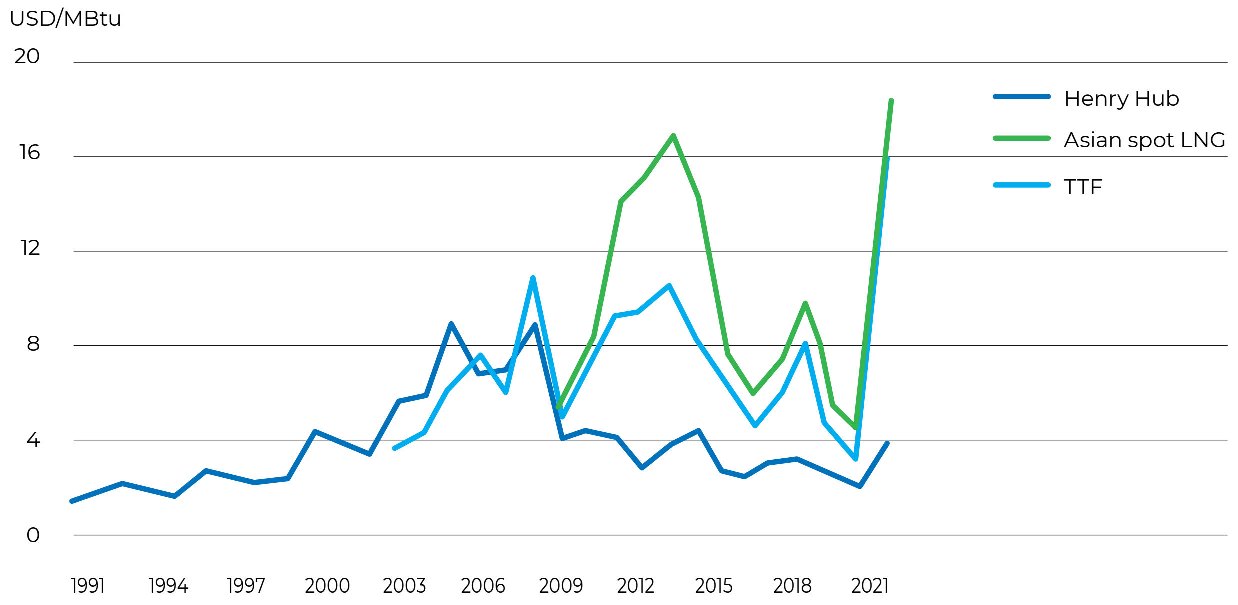
Strategic direction

In 2021, KMG adopted the Low-Carbon Development Programme 2022–2031, which sets out the key areas for KMG to reduce its carbon footprint. To monitor progress towards the respective targets and report on GHG emissions, KMG plans to develop a GHG Emission Monitoring and Reporting Methodology.

3. Record-high gas prices – soaring Chinese demand and Europe's energy crisis.

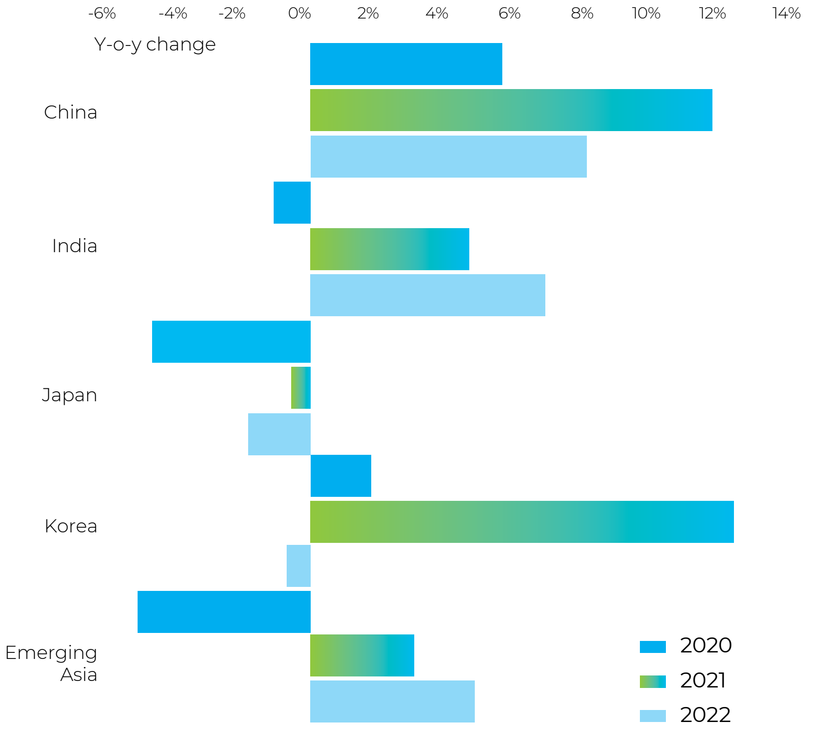
In 2021, global natural gas consumption went up by 4.6%, which is more than double the decrease in 2020. The demand growth was driven by economic recovery and a number of extreme weather events. The year started out with a cold wave, which triggered price hikes in Asia and North America, and ended with record-high natural gas prices on the key import markets of Europe and Asia. Lagging supply coupled with unexpected outages led to market shortages and a sharp price increase, stymieing the demand in the second half of 2021.

Regional natural gas prices, mln BTUs (1991-2021)



In 2021, gas demand in Asia grew 7%. Northeast Asia accounted for over 82% of the net growth in Asia on the back of a cold winter combined with a hot summer and sporadic droughts. China was responsible for 69% of the total 2021 consumption growth in Asia.

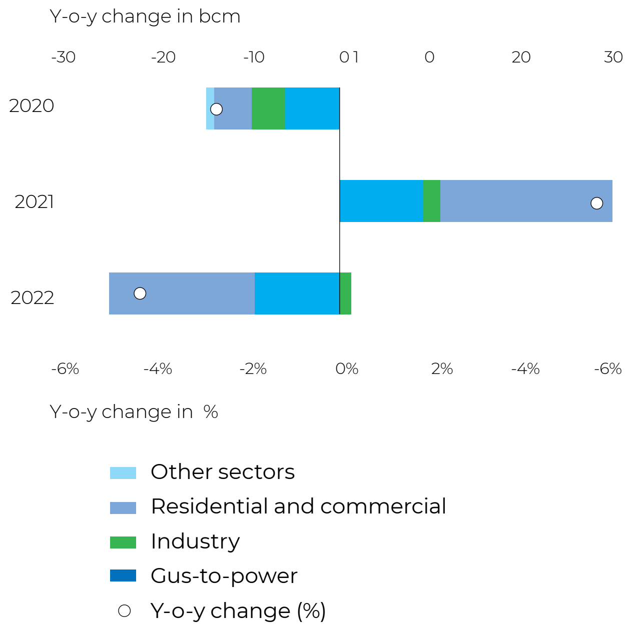
Gas demand in selected Asian countries, including China, in 2020–2022, %



In 2021, Europe's gas consumption went up around 5.5%, or 30 bln m^3. Following its strong 13% year-on-year growth in 2021's first half, gas demand in Europe shed almost 5% in Q3 amid price increases and remained stable in Q4, which caused a switch from gas to coal in the energy sector.

Source: U.S. Energy Information Administration

Change in Europe’s natural gas demand, % and bln m³ (2020–2022)



Source: U.S. Energy Information Administration

Strategic direction

On 9 November 2021, 100% of shares held by JSC KazTransGas (renamed later JSC NC QazaqGaz) were transferred from KMG to Samruk-Kazyna. As a result, JSC KazTransGas gained the status of a national company and a pre-emptive right to explore and develop gas and gas condensate fields. KMG seeks to promote the modernisation and diversification of Kazakhstan’s gas industry. To that end, the Company will continue to cooperate with JSC KazTransGas in this area.

4. Long-term growth in demand for petrochemicals

Over a relatively short period of time, petrochemicals gained a strong foothold across almost all continents and now account for a structural share of up to 10% in many economies. According to Research and Markets, the world petrochemical market expanded from USD 365.0 bln in 2020 to USD 429.11 bln in 2021, demonstrating CAGR of 17,6%. It is expected to reach 860.8 bln by 2028.

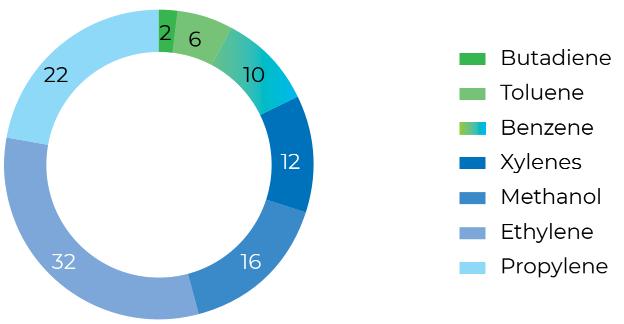
Global petrochemicals market, USD mln

Market forecast to grow at CAGR of 3%

Source: Research and Markets

Over the last decade, investment in new chemical assets was mainly concentrated in China, the Middle East, and North America, each boasting unique investment incentives, such as fast-developing markets and domestic advantages related to energy and raw materials. Mainland China has been focusing on investing in coal-based chemicals production and special propylene production processes, but these efforts slowed down following the recent introduction of environmental control measures, especially those related to chemicals from coal.

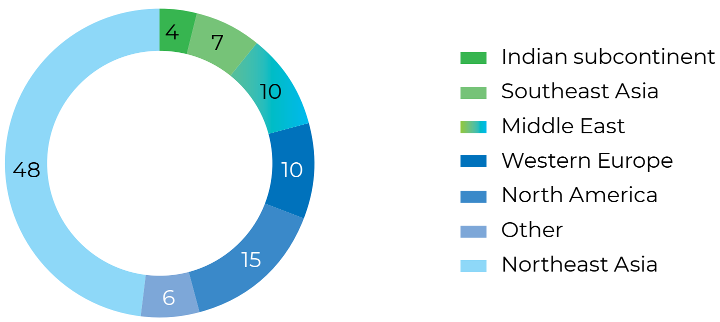
World consumption of primary petrochemicals, % (2021)



Source: IHS Markit

Asia-Pacific was the top region on the global petrochemicals market with a share of 48% in 2021, followed by North America in second place with 15%. The Indian subcontinent was bringing up the rear with the smallest share. Asia-Pacific is predicted to experience the highest average annual growth rate in the foreseeable future on the back of crude refining capacity expansion, population growth, and improvement of living standards all throughout the region.

World consumption of primary petrochemicals by region, % (2021)



Source: IHS Markit

Strategic direction

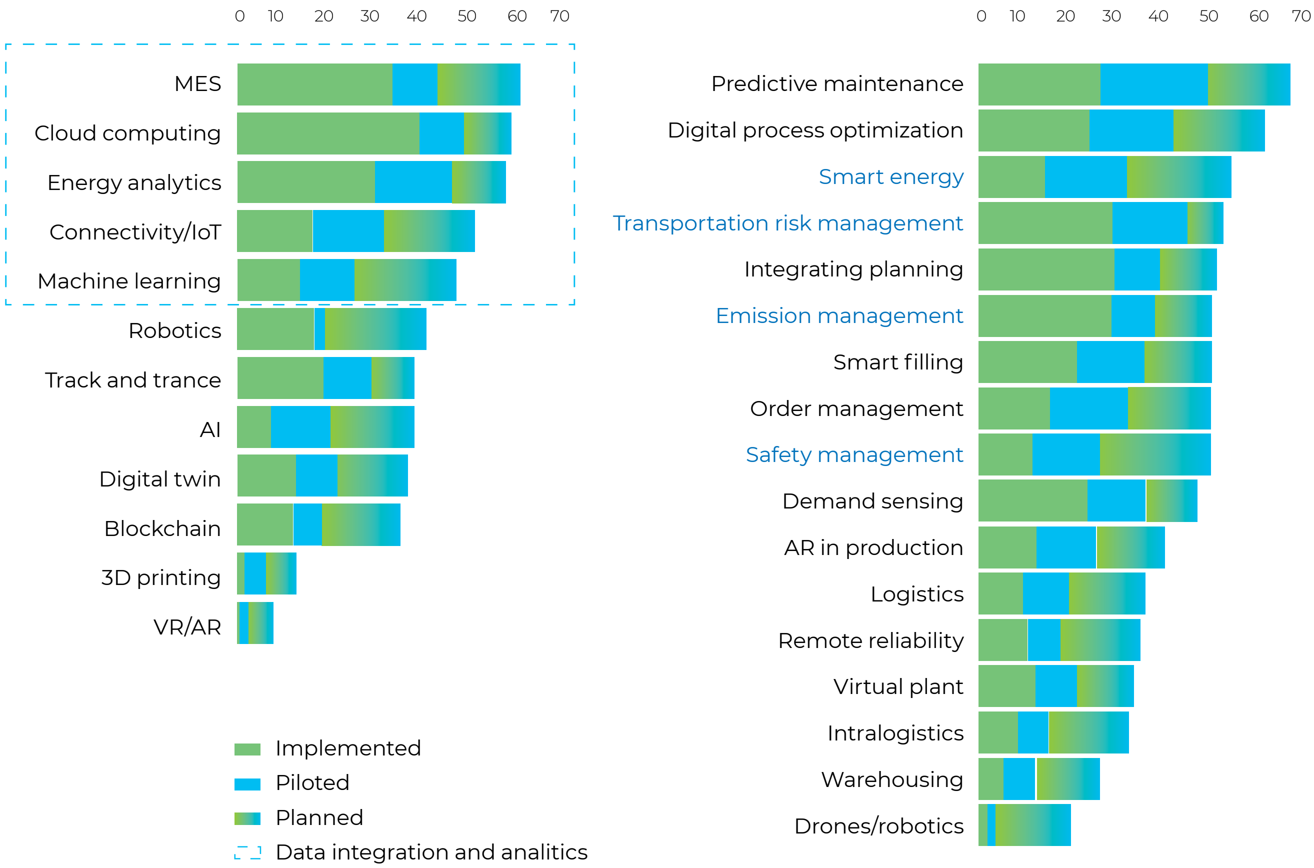
KMG is working on petrochemical projects to produce polypropylene and polyethylene, with plans for a butadiene production project as well. In late 2021, the main construction of a 500 ths tonnes annually plant, which will produce over 65 different polypropylene grades, was completed at Kazakhstan Petrochemical Industries Inc. (KPI) in the Atyrau Region. The project will fully meet the domestic polypropylene demand while also providing for exports.

5. Accelerated growth and use of digital technologies. Business process digitisation and automation

In recent years, the rate of technological innovation in oil and gas has gained considerable steam. Social, mobile, analytical and cloud solutions form the foundation for companies' technological development.

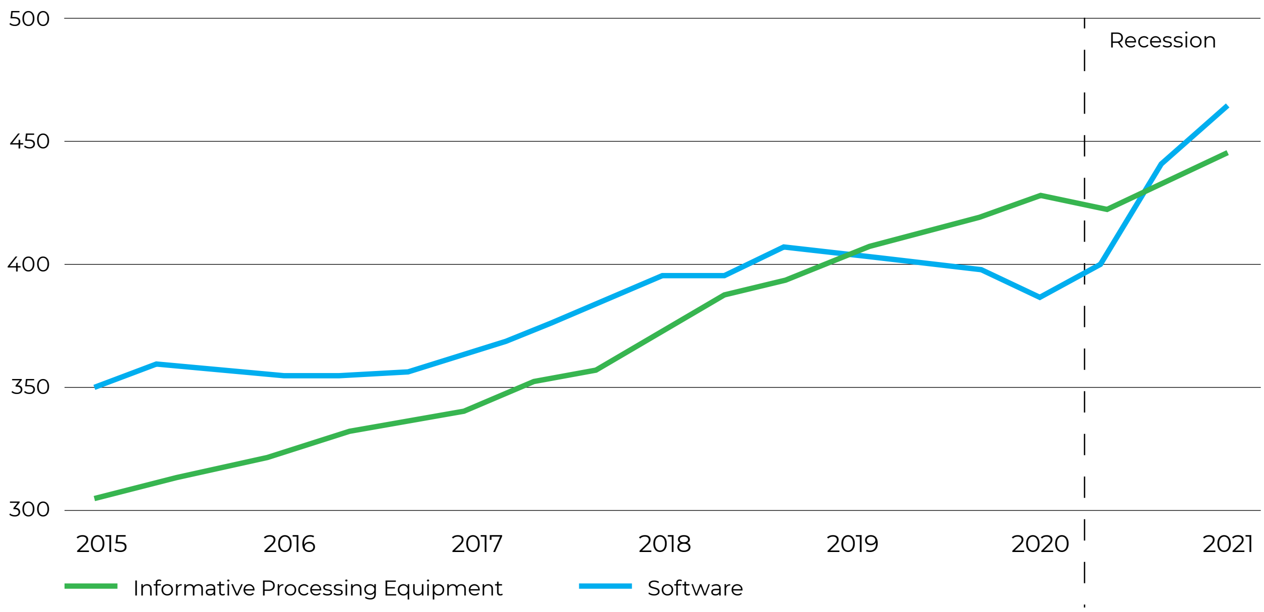
Global studies have identified the main trends that are set to hold sway over the oil and gas industry in the coming years. They include, among others, the DARQ technologies , technology identity, individuals' skillsets being empowered by a new set of capabilities made possible through technology, cyber risk management, and rise of "momentary" markets.

Digital technology implementation in oil and gas by technology and by application



The COVID-19 pandemic has hastened the adoption of sensors, the Internet of Things and cloud computing to support remote monitoring of oil wells and refineries, which is a trend that can still be seen today. Computing technology, big data, clouds and machine learning streamline asset performance and remote operations.

Surge in pandemic-induced digital transformation, USD bln



Strategic direction

KMG's key processes are automated, and individual processes and systems are partly integrated. KMG runs a staggered pipeline of digital projects so as to tackle the challenges posed by the business world, engaging in what could be called reactive digitalisation.

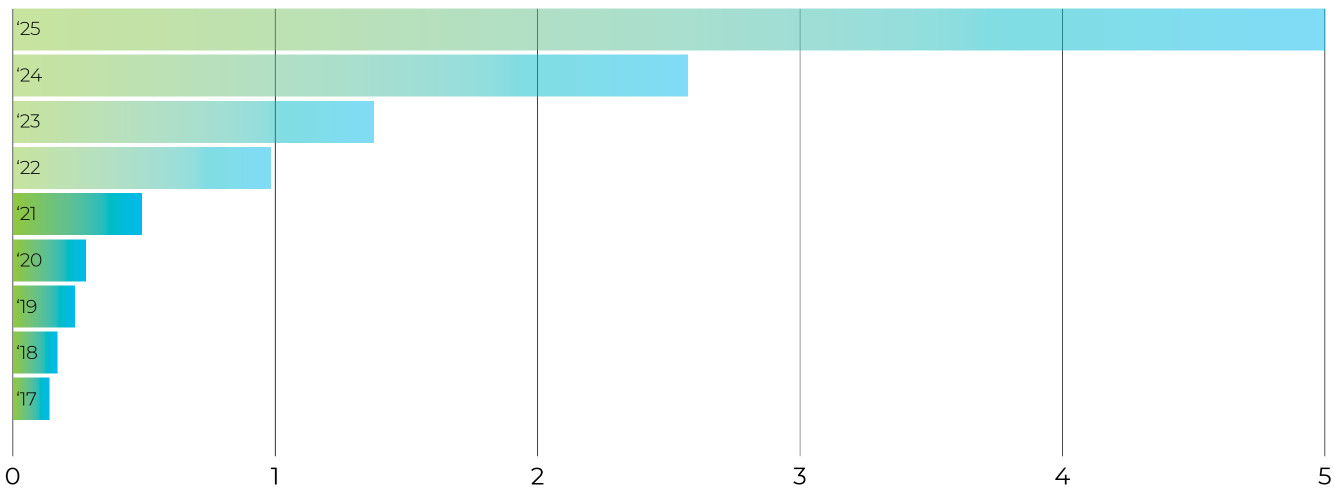
In the context of the current maturity level, digitalisation efforts are focused around the needs of specific subsidiaries and associates, with businesses being involved as early as ideation. The emphasis lies on targeted initiatives addressing concrete business gaps in production and yielding direct financial gains, which will result in improved automation and digitisation of corporate business processes and, consequently, better efficiency and achievement of ever higher KPIs.

One of the Company's digitalisation initiatives is the development and implementation of the KMG automated environmental monitoring information system (AEMIS). AISEM is conceived as a vehicle for comprehensive automation of environmental activities, including collection, storage, processing and analysis of environmental data. Access will be granted to designated KMG Group employees.

6. The growing importance of sustainability and ESG financial instruments across the investment community. The trend towards carbon neutrality in the oil and gas sector

In 2021, Glasgow hosted the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP26). Each Party to the 2015 Paris Agreement is required to establish a Nationally Determined Contribution (NDC) – a climate action plan to cut emissions – and update it every five years. Under a Global Coal to Clean Power Transition Statement, more than 40 countries have committed to phase out coal (by 2030 for OECD countries and by 2040 globally) and cut public financing for new coal-fired power stations. The Statement also provides for a threefold increase in annual renewables investment by 2030.

Green bond issuance, USD tln (2017–2025)



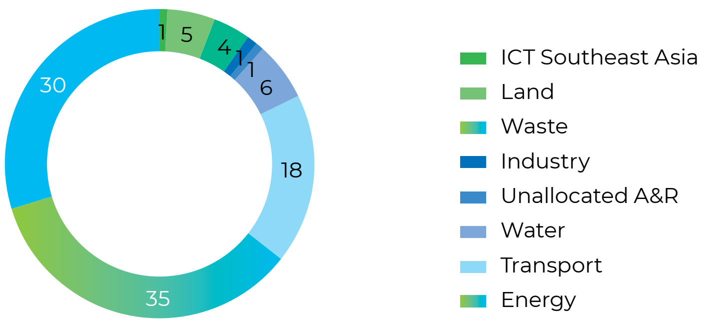
Green bonds represent a tool for attracting capital to be directed towards mitigation and adaptation climate objectives contained in NDCs.

One of the milestones advocated for at COP22 in 2016 was USD 1 tln in annual green investment. Climate Bonds Initiative estimates that the current green investment growth trajectory could land the first annual green trillion in 2022 then USD 5 tln by 2025. Hitting this milestone early this decade serves as key indicator that capital is being shifted at scale towards climate solutions.

The Renewable Energy category drew the largest share of green investment across sectors and issuer types in 2021, followed by investments into Low-Carbon Buildings and Transport.

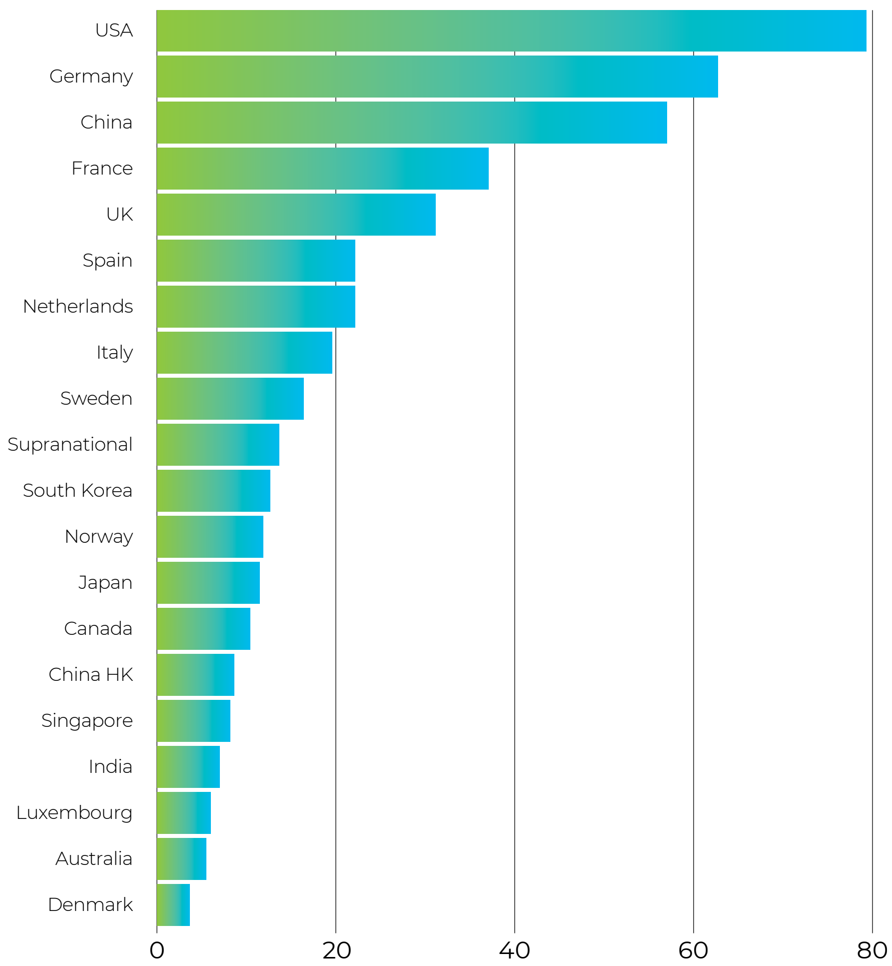
The US and Germany maintained their leading first and second positions. France, the third largest green issuing nation in 2020, was pipped for a podium place by China, which moved up a spot in 2021. Kazakhstan is at the start of its hydrocarbon-to-renewables transition. According to the Green Finance Centre (GFC) of the Astana International Financial Centre (AIFC), Kazakhstan has issued upwards of USD 250 mln in green bonds. In the short term, KMG may consider issuing green bonds as an additional source of investment for its Low-Carbon Development Programme 2022–2031.

Use of green investments in 2021, %



Source: Climate Bonds Initiative 2022

Top 20 green investors in 2021, USD bln



Strategic direction

KMG remains committed to being an environmentally responsible business, further enhancing its environmental protection management system, maintaining continuous dialogue on sustainable development with all stakeholders, and actively contributing to nature preservation and social stability across its footprint. As part of these efforts, KMG fulfils its obligations of ensuring open communication, awareness, and regular reporting for stakeholders when it comes to material ESG aspects of the Company's operations.

In 2021, JSC NC KazMunayGas was, for the fifth year running, first among Kazakhstani companies in the Environmental Transparency Rating for Oil and Gas Companies compiled by WWF, ACRA, and CREON Group.

Furthermore, for the second year in a row JSC NC KazMunayGas topped the rating of the 50 best companies in non-financial corporate reporting, which PwC Kazakhstan picks out of 96 organisations. To arrive at the finalists, PwC Kazakhstan assessed the quality and availability of ESG information in the 2021 annual and sustainable development report of Kazakhstani companies. The rating aimed to evaluate Kazakhstani companies' ESG disclosure, identify best practices, and provide recommendations for further development.

Internal drivers and their impact on strategy implementation

1. Kazakhstan's oil and gas industry in 2021

According to the US Energy Information Administration (EIA), Kazakhstan, an oil producer since 1911, has the second largest oil production after Russia among the former Soviet republics.

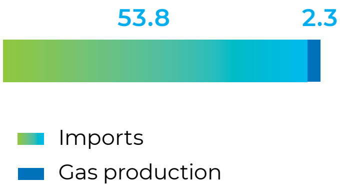
The oil and gas industry is a key sector of Kazakhstan's economy due to its significant hydrocarbon reserves. This industry, together with related sectors (such as transportation, construction of production facilities and geology), accounts for approximately 17% of the total gross domestic product (GDP) of Kazakhstan, according to estimates by the Kazakhstan Association of Oil, Gas and Energy Sector Organisations "KAZENERGY" in the fifth National Energy Report published by in October 2021. 28% of gross FDI inflows in 2021 came into the crude oil and natural gas production sector. In 2021, exports of crude oil, natural gas and oil products accounted for 57% of Kazakhstan's total exports.

As production expanded over the past decades, Kazakhstan has significantly strengthened its position in the global hydrocarbon market. According to BP's Statistical Review of World Energy (July 2021), Kazakhstan ranks 12th globally by the volume of its proved reserves.

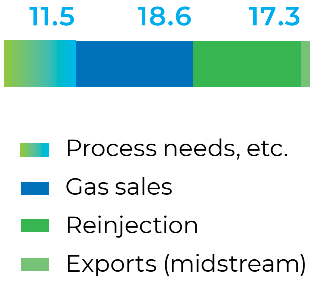
According to the data and analysis provided by the Information and Analytical Centre of Oil and Gas of the Ministry of Energy of the Republic of Kazakhstan, Kazakhstan produced 85.9 mln tonnes of crude oil and gas condensate in 2021 (83.3 mln tonnes and 2.5 mln tonnes, respectively), up 0.3% year-on-year. According to the Ministry of Energy, the country exported 67.6 mln tonnes. Gas production in 2021 totaled to 53.8 bln m^3, down 2.4% year-on-year. According to the Ministry of Energy, the country exported 7.7 bln m^3 of gas.

At the end of December 2021, Kazakhstan's Ministry of Energy estimated the country's oil output in 2022 at 87.5 mln tonnes. Tengizchevroil LLP (TCO) is expected to produce 28.73 mln tonnes, Kashagan – 14.9 mln tonnes, and Karachaganak – 10.87 mln tonnes. Oil exports in 2022 are estimated at 67.5 mln tonnes.

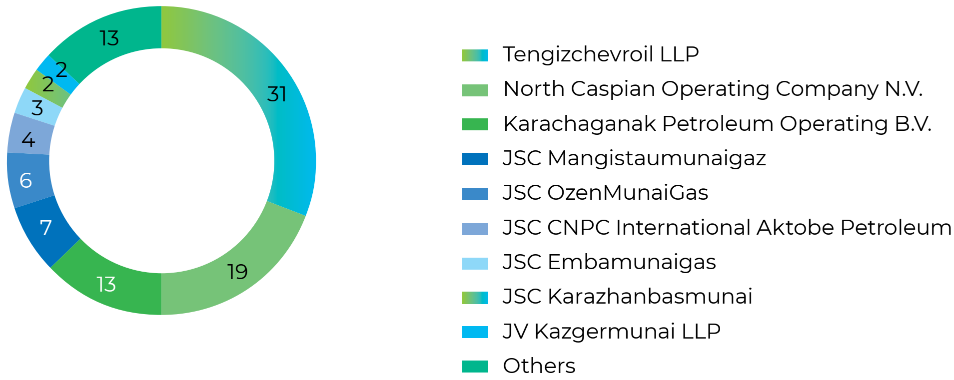
Gas balance in Kazakhstan in 2021, bln m³



Gas balance in Kazakhstan in 2021, bln m³



Oil and gas condensate production in Kazakhstan in 2021, %



Source: Information and Analytical Centre of Oil and Gas of the Ministry of Energy of the Republic of Kazakhstan

Oil and gas transportation
Kazakhstan has advanced and diversified oil and gas transportation, refining and processing infrastructure, which facilitates the country's access to global sales markets.

Oil refining and gas processing
According to the Information and Analytical Centre of Oil and Gas of the Ministry of Energy, the throughput at Kazakhstan refineries in 2021 was 17.03 mln tonnes, up 7.7% year-on-year. The production of all grades of petrol was at 4.81 mln tonnes (up 7.3% year-on-year), jet fuel was at 0.587 mln tonnes (up 34% year-on-year), and diesel fuel was at 4.87 mln tonnes (up 7% year-on-year).

KMG position in Kazakhstan's oil and gas industry
KMG is the national leader in Kazakhstan's oil and gas industry with a fully integrated value chain.

Proved (1P) oil and condensate reserves life was 16.5 years (based on the 2021 output), far exceeding the average of about 11 years for the global oil majors (based on the 2020 output). KMG's proved and probable (2P) oil and condensate reserves life (based on the 2021 output) was 23.7 years.

KMG showed the best operating results in Kazakhstan's oil and condensate production segment in 2021, according to the Company's in-house estimates. In 2021, the share of KMG in Kazakhstan's oil and condensate production was 25%, while its share in the nation's gas production came in at 15%.

KMG operates four largest refineries in Kazakhstan with a share of 82% in the refining market in 2021. KMG completed an ambitious investment programme to upgrade three core refineries in Kazakhstan. As a result of this programme, KMG ramped up our refining capacity and improved product quality, fully met the domestic demand for oil products and expanded their exports to regional markets.

The oil transportation infrastructure managed by KMG is highly diversified and has a strong transit and export potential. KMG's share in the oil transportation market, including trunk pipelines and sea transportation, totalled 56% in 2021.

On 9 November 2021, 100% of shares held by JSC KazTransGas (JSC NC QazaqGaz) were transferred from KMG to Samruk-Kazyna. As a result, JSC KazTransGas (JSC NC QazaqGaz) gained the status of a national company and a pre-emptive right to explore and develop gas and gas condensate fields. KMG seeks to promote the modernisation and diversification of Kazakhstan's gas industry. To that end, the Company will continue to cooperate with JSC KazTransGas (JSC NC QazaqGaz) in this area.

KMG's market share in Kazakhstan by segment in 2021, %

Sources: Company estimates, Oil and Gas Information and Analysis Center of the Ministry of Energy

Competition analysis

Hydrocarbon exploration

1P oil and condensate reserves life in 2020–2021

Strategic direction

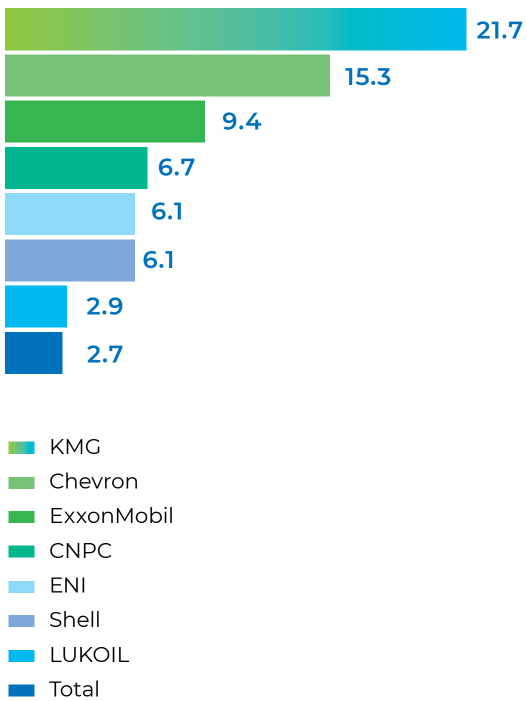
KMG focuses closely on further development of the nation's oil and gas industry, while also helping the government to address the challenges of social and economic development in Kazakhstan. The Company acts on behalf of the government in the oil and gas industry and demonstrates strong social responsibility. Successful and sustainable business development is inextricably linked to the nation's economic competitiveness, social welfare, conservation and efficient use of natural resources. KMG sees its mission in the effective and sustainable use of natural resources to ensure energy security, development and prosperity of Kazakhstan, while caring about future generations. In line with the KMG mission, we have set out four strategic goals:

1. resource base sufficient to support the Company's growth;
2. improved efficiency across the Company's value chain;
3. business diversification and product portfolio expansion;
4. sustainable development and gradual reduction in carbon intensity of production.

2. Development of Kazakhstan's petrochemical industry

Kazakhstan actively develops its petrochemical industry. Over the past ten years, the nation's petrochemical output has been growing driven by the launch of new manufacturing facilities. In 2021, petrochemical production is expected to come in at 185 ths tonnes, with plans to increase it to 560 ths tonnes in 2022.

Estimated oil and condensate output in Kazakhstan in 2021, mln tonnes



Sources: Company estimates, Information and Analytical Centre of Oil and Gas of the Ministry of Energy of the Republic of Kazakhstan

In late 2021, the main construction of a 500 ths tonnes annually plant, which will produce over 65 different polypropylene grades, was completed at Kazakhstan Petrochemical Industries Inc. (KPI) in the Atyrau Region. Also in 2021, a 57 ktpa octane booster plant in Shymkent and a technical gas plant in Atyrau with a capacity of 57 mln m^3 of nitrogen and 34 mln m^3 of dry compressed air were commissioned.

Plans are underway to construct a number of major production facilities, including a polyethylene plant (1.25 mln tonnes), terephthalic acid and polyethylene terephthalate plant (1.25 mln tonnes) and butadiene plant (189 ths tonnes).

Strategic direction

KMG will be strongly involved in developing Kazakhstan's petrochemical industry with support from the government, which is expected to significantly boost the national economy as growth in the petrochemical sector will have a multiplier effect on the entire domestic market

3. Kazakhstan's involvement in the OPEC+ agreement

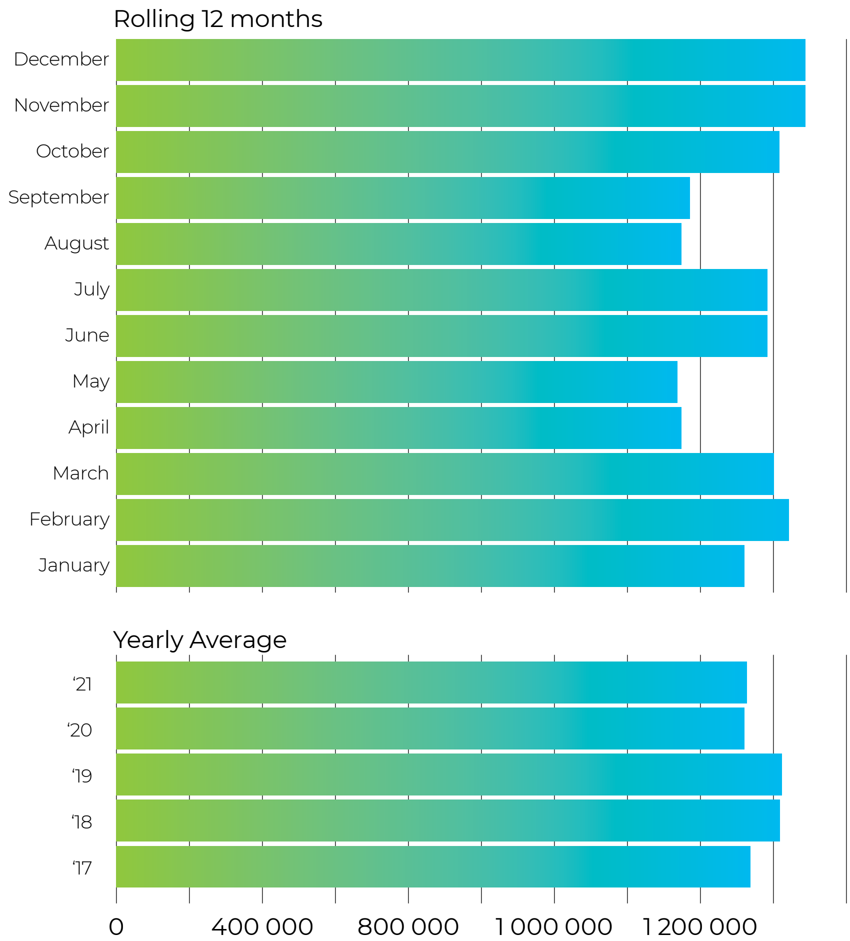
In April 2020, OPEC+ countries decided to cut oil production with plans to gradually ease curbs on oil supply later. As a member of OPEC+, Kazakhstan's Government introduced temporary restrictions on oil production effective from 1 May 2020. The Resolution of the Government of the Republic of Kazakhstan on introduction of temporary restrictions on the use of subsoils for exploration, production and extraction of hydrocarbons imposed limitations on some of the KMG fields. KMG fully honours all of these commitments.

Starting from August 2021, the OPEC+ nations decided to increase oil production by 400 ths bbl per day each month up to the moment when the member countries resolve to lift all relevant restrictions. This is the base case scenario, which was originally planned to stay in place until spring 2022. However, due to considerable uncertainty, OPEC+ nations hold monthly online conferences to confirm this scenario or review it for the upcoming period.

Strategic direction

Despite the negative impact the COVID-19 pandemic and OPEC+ restrictions had on the Company's operations, the implemented crisis response measures helped KMG adapt to new conditions and maintain financial stability.

Production of liquid hydrocarbons (oil and condensate) in Kazakhstan in 2017–2021, bbl per day



4. Kazakhstan's new Environmental Code

The new Environmental Code of the Republic of Kazakhstan came into effect on 1 July 2021. This new Code is based on the "polluter pays and remedies" principle, which implies that major industrial businesses take measures to prevent pollution and introduce best available techniques. The document provides for new approaches to environmental impact assessment, emission charges, streamlined industrial and consumer waste management, and significantly higher penalties, which will contribute to substantial environmental improvements. During the first phase, the 50 largest facilities accounting for 80% of pollutant emissions (including the oil and gas sector) will begin an orderly transition to best available techniques (BAT).

As part of the new Code implementation, Kazakhstan's Ministry of Ecology, Geology and Natural Resources launched a Unified Environmental Portal[1] as a venue for all environment-related government data. The Unified Environmental Portal is a critical platform designed to support the nation's businesses and help them develop. The portal unlocks a significant untapped potential in terms of digitalising business process related to environmental protection and sustainability. The platform will also help to automate such business processes as waste and emissions reporting and classification of facilities.

Strategic direction

KMG prioritises measures to minimise its environmental footprint. The Company's subsidiaries completed a number of initiatives designed to ensure environmental safety and provide tools for comprehensive assessment of their environmental impact. Our digitalisation initiatives included a project to develop and implement the KMG automated environmental monitoring information system (AEMIS). AEMIS is conceived as a vehicle for comprehensive automation of environmental activities, including collection, storage, processing and analysis of environmental data.

KMG Group proclaimed 2021 the Year of Environment, using this occasion to raise ecological awareness, reduce environmental impact and take steps needed to meet new ecological requirements and global trends.

5. Kazakhstan's doctrine (strategy) for carbon neutrality by 2060

The Republic of Kazakhstan is currently working on a doctrine (strategy) for carbon neutrality by 2060 to provide two distinctive scenarios for our economic future. The scenario-based analysis and assessment of investments needed for transition to carbon neutrality are based on the comprehensive models of potential industrial solutions, system evolution and macroeconomic effects.

In addition to the analysis of climate change mitigation options, the Strategy offers an evaluation of related benefits arising from the reduction of GHG emissions and higher carbon capturing capacity, as they will serve as an important driver for local economic, social and environmental changes.

Furthermore, the Strategy focuses closely on the existing policy barriers and opportunities, such as regulations encouraging investments and market growth, as well as awareness-raising campaigns. The macroeconomic impact of carbon neutrality is benchmarked against the option of sticking with the last years' policy of less ambitious climate goals.

Fending off climate change is not the only big challenge facing Kazakhstan – the country also has to find ways to adapt to the new post-climate change reality. The Strategy offers an overview of climate vulnerabilities and impacts, as well as the goals and initiatives Kazakhstan needs to pursue in order to successfully adapt to the upcoming changes. Furthermore, the document analyses the interdependence between climate change adaptation and mitigation strategies, including by placing an emphasis on country-specific priority areas, such as land use and agriculture, water management and clean energy projects.

Strategic direction

Amid the growing importance of the climate agenda and tightening carbon impact regulations, KMG approved its Low-Carbon Development Programme for 2022–2031. This programme advances a single low-carbon development agenda as an essential part of the corporate governance framework and seeks to streamline the Company's efforts in the realm of carbon footprint reduction. The document primarily aims to formulate the climate ambitions of KMG, structure key carbon footprint reduction approaches and initiatives through the analysis of the existing potential, define main avenues for development and increase the Company's preparedness. Given the country-specific ambitions and expectations, KMG strives to reduce carbon dioxide emissions by 15% or 1.6 mln tonnes of CO_2 by 2031 vs 2019. To achieve this goal, KMG plans to improve its energy efficiency and saving, and to scale up the use of renewables for industrial purposes.

[1] Unified Environmental Portal – https://ecoportal.kz/Home/Contact

6. National Project for the Geology Sector Development in 2021–2025

In 2021, the State Geological Exploration Programme for 2021–2025 was transformed into the National Project for the Geology Sector Development in 2021–2025.

Over the past decades, Kazakhstan has depleted many of its major polymetal ore fields, with oil output declining every year in some of the regions. That said, the country still has room for new discoveries of hydrocarbons and solid minerals.

That is why the National Project aims to define the oil and gas potential of poorly explored sedimentary basins and to prospect deep horizons in the mining regions.

Implementation of the National Project will help update exploration data and appraise prognostic mineral resources, while also increasing employment rates in the exploration industry, attracting investments and creating new jobs in the construction, mining and concentration sectors.

Strategic direction

KMG will be exploring and developing new reserves in Kazakhstan, among other things in strategic partnerships with global oil and gas majors. To speed up the reserve growth, exploration will rely on the latest technologies and methodologies, including new processing approaches, high-quality re-interpretation of geological and geophysical materials, and the use of next generation technologies in seismic surveys.

7. Kazakhstan's economy

In order to maintain social and economic stability amid the state of emergency and pandemic-induced restrictions last year, the government adopted and implemented three crisis response packages: urgent measures to support the population and business, prompt measures to preserve socio-economic resilience and a Comprehensive Plan to Restore Economic Growth.

Kazakhstan's real GDP grew by 4.0% driven by a rally in commodity prices, revival of commercial and economic activity amid softening lockdown restrictions, and gradual global economic recovery. Transportation, construction and manufacturing were the main contributors to GDP growth. Higher cargo and passenger traffic was the key driver behind expansion in the transportation sector. Despite GDP growth, commerce was on the downward slope. The negative trends in commerce are associated with the slow-paced lifting of lockdown restrictions and suppressed demand.

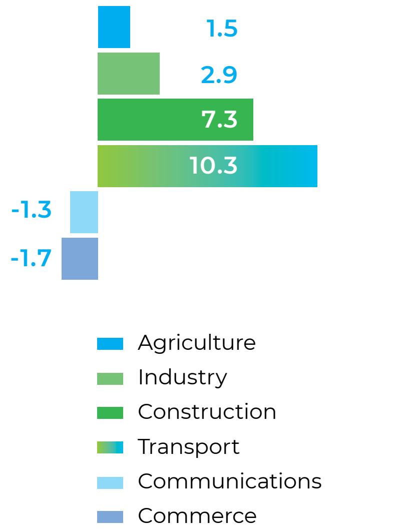
Transition to tighter monetary policy in the developed economies, appreciation of the US dollar and capital flight from the emerging markets increased pressure on the tenge, which lost 2.6% in value in 2021. Dedollarisation / dollarisation of bank deposits and the status of the balance of payments were the most critical factors for the tenge in the domestic market. Even though Kazakhstan's exports expanded on the back of rising oil prices, increasing imports continued to pile pressure on the national currency. Strong reliance on imports is one of the main factors hampering dedollarisation of households and the corporate sector.

Inflation in 2021 came in at 8.4%, i.e. within the 8.5% range fixed by the head of state, but above the inflation target for the year. The inflation target for 2022 is set at 4–6%. In 2022, this figure will go down to 4–5%. Mid-term inflation is expected to decrease to 3–4% in 2025.

Gradual recovery of consumer demand driven by adaptation to the imposed restrictions, higher production costs, ongoing disruptions in global supply chains, and rising inflation in the country's international trade partners accelerated the pace of price growth. In an attempt to stabilise non-monetary inflation drivers, the Government of Kazakhstan joined forces with the National Bank in September 2021 to launch a set of anti-inflationary response measures for 2021–2024. This helped keep food inflation, the main contributor to overall price growth, at 9.9%.

The National Bank of Kazakhstan, on its part, proceeded with its disinflationary monetary policy designed to curb rising prices and anchor inflation expectations. Starting from July 2021, the National Bank raised its key interest rate three times for a total of 0.75 p.p. (from 9.0% to 9.75%).

Year-on-year growth in key sectors of the economy in 2021, %

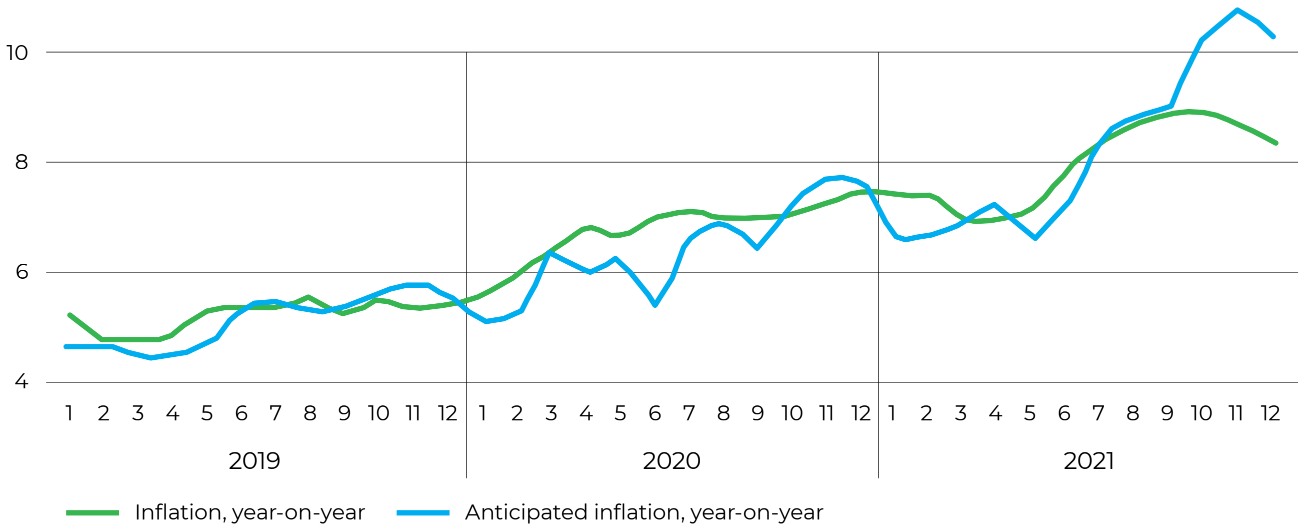


Strategic direction

Amid the ongoing upheavals, KMG developed and successfully implemented its crisis response strategy for 2020 –2021, which helped significantly mitigate the impact of the crisis on the Company. KMG's crisis response strategy primarily focused on the Company's adaptation to low oil prices along with the greatest possible retention of existing production and human resources.

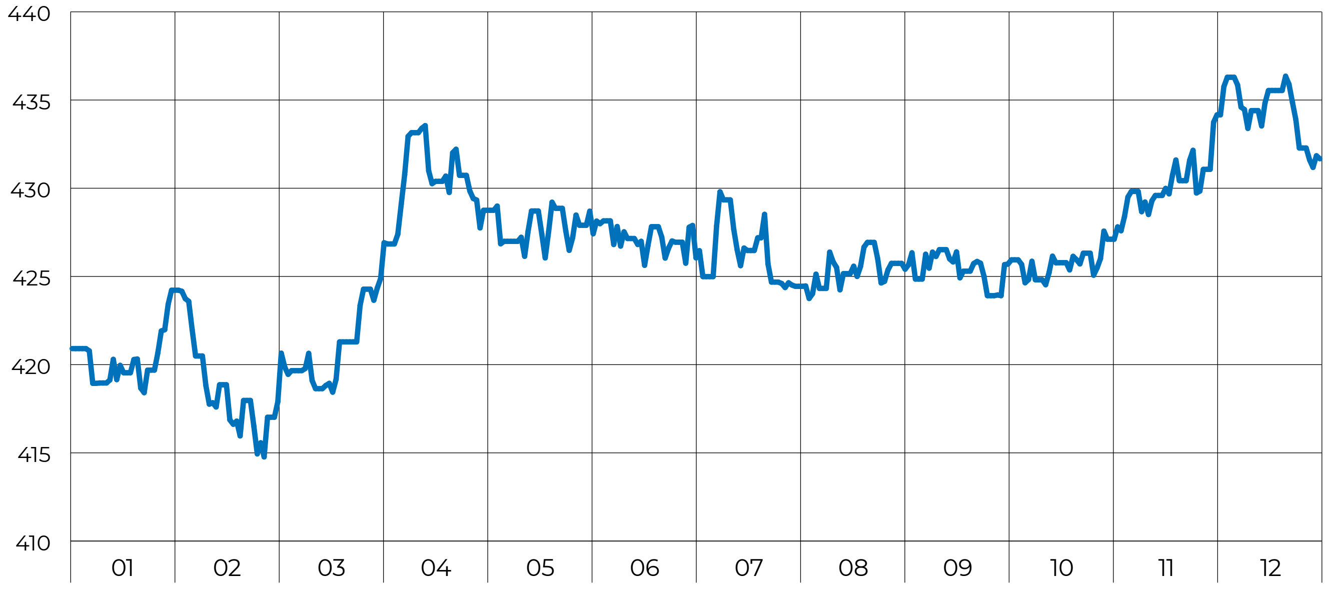
In its operations, KMG seeks to achieve the key strategic objectives of the government in developing the country's oil and gas industry. The Company is guided by Kazakhstan's strategic documents and implements development programmes designed to support the country's economy and social initiatives.

Inflation and anticipated inflation, %



Sources: Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, FusionLab

Dynamics of USD/KZT exchange rates in 2021



KMG DEVELOPMENT STRATEGY

Approval of the new KMG 2022–2031 Development Strategy

As a vertically integrated national oil company, KMG delivers on its targets, focuses on further developing the Kazakh oil and gas industry, and supports the Government in addressing tasks related to Kazakhstan's social and economic development.

Before 2017, the Company pursued a rapid growth strategy based on investments and acquisitions that relied on borrowed funds, which was the primary driver of KMG's high leverage. The Company was able to acquire a number of large assets, ramp up hydrocarbon reserves, upgrade its refining capacities, and expand existing and create new infrastructure to transport oil and gas domestically and have them exported. This approach helped to promote sustained economic growth and contributed to the nation's energy security.

The development strategy adopted in 2018 targeted gradual organic growth while prioritising financial stability. Over these years, the Company has achieved most of its medium-term objectives.

In 2020, as a way to respond to the global economic downturn, KMG came up with crisis response measures for 2020–2021. The Company honoured its obligations to cut down on oil and condensate production as part of the OPEC+ agreement, ensured continuity of its production process across all lines of business, maintained financial stability, continued with investments in development projects, and retained the potential for growth going forward.

Changes in global trends, new strategic vision to benefit all stakeholders, and new opportunities available to the Company caused KMG to engage in a large-scale effort in 2021 to update its Development Strategy and identify priority goals for the next ten years until 2031.

The Company came up with new vision, mission, and strategic goals aligned with today's challenges and supporting KMG's further development in the long run.

Key areas for KMG's development

As part of its new Development Strategy until 2031, KMG focuses on its core operations seeking to drive organic growth and improve operations across all key segments.

VISION

Vertically integrated national oil and gas company that meets the highest standards of safety, is committed to sustainability principles, and strives to maximise its financial performance.

MISSION

We are effective and sustainable in our use of natural resources to ensure energy security, development and prosperity of Kazakhstan while also caring about future generations.

KEY PRIORITIES OF SHARE-HOLDERS

- Effective portfolio management
- Responsible investment
- Sustainable development

TARGETS – 2031

CO_2 EMISSIONS REDUCED BY 15%

SHARE OF RENEWABLE ENERGY IN TOTAL ENERGY CONSUMPTION INCREASED TO 15%

REDUCTION IN CARBON INTENSITY AND ENERGY INTENSITY OF PRODUCTION AT LEAST 10%

ESG RISK RATING IDENTIFIED AS MEDIUM

Improved ESG risk rating and reduced carbon footprint

Sustainable development and gradual reduction in carbon intensity of production

Energy transition

STRATEGIC FOCUSES

Value creation

Resource base sufficient to support the Company's growth	Improved efficiency across the Company's value chain	Business diversification and product portfolio expansion
New reserves that are quickly put on stream	Higher net cash flow and lower specific costs	Additional cash flow from expanding the value chain

TARGETS – 2031

NEW RESERVES +299 MLN TONNES

TOTAL OIL OUTPUT 240 MLN TONNES

REFINING DEPTH AT KAZAKH REFINERIES IMPROVED TO 89%

PLANNED PETROCHEMICAL PROJECTS ON POLYETHYLENE, POLYPROPYLENE AND BUTADIENE PRODUCTION SUCCESSFULLY IMPLEMENTED

Strategic goals

Objectives as part of the strategic goals

STRATEGIC GOALS

Strategic goal #1

Resource base sufficient to support the Company's growth

The Company remains engaged in conventional hydrocarbon production based on analytical research into the global oil market that assumes oil retaining its position as the dominant fuel with a 28.1% share of global demand by 2045[1] .

As part of this strategic goal, KMG plans to grow organically and inorganically to add new reserves sufficient both for conventional operations and new promising areas of activity.

KMG will be exploring and developing new reserves in Kazakhstan, among other things in strategic partnerships with global oil and gas majors.

Whenever there are attractive M&A opportunities and the market environment is favourable, KMG will be searching for and acquiring new assets.

KMG aims to increase its total A, B, and C1 reserves by 299 mln tonnes, including 253 mln tonnes to be added through organic growth.

BY 299

MLN TONNES

KMG AIMS TO INCREASE ITS TOTAL A, B AND C1 RESERVES

Strategic goal #2

Improved efficiency across the Company's value chain

As part of this goal, KMG focuses on its core operations seeking to maximise benefits from production, refining, transportation, and marketing of oil and to improve operations across all key segments.

To make up for the natural decline in production at its operating assets, the Company will continue working to increase oil recovery ratios and the time between repairs as well as engage in other measures to improve efficiency with a view to maximising well productivity. KMG also plans to launch a number of new fields. Over the next ten years, the Company expects to achieve 240 mln tonnes of oil in total production.

At its large Tengiz, Karachaganak and Kashagan fields, the Company focuses on successful implementation of expansion projects and projects to maintain and extend production plateau.

The Company is committed to effectively leveraging the existing oil transportation infrastructure to enhance its exports and transit businesses.

A major priority for KMG is to ensure uninterrupted operation of oil refineries and meet domestic demand for oil products. Today, having upgraded refineries across Kazakhstan,

[1] Sources: OPEC's World Oil Outlook 2045, 2021.

the Company delivers on this strategic goal for the nation while also exporting part of the oil products. KMG also plans to increase the refining depth at its refineries to 89%.

In order to keep growing its cash flow, the Company remains committed to cutting its operating costs across all businesses and to making the supply chain more effective.

To ensure effective operation of the holding company, KMG implements the privatisation and divestment programmes to exit non-core and non-strategic businesses.

Strategic goal #3
Business diversification and product portfolio expansion

With cheap feedstock readily available, KMG sees petrochemicals as its new point of growth and aims to create new capacity in this segment.

KMG will be strongly involved in developing the Kazakh petrochemical industry with support from the Government.

The Company will rely on existing and new hydrocarbon resources to run petrochemical projects and make new products amid global shifts in oil demand in the long run.

A KPI Inc. polypropylene plant is expected to be constructed and launched in 2022, and in the medium term, the Company expects to start projects to make butadiene and polyethylene in strategic partnerships with global oil and gas majors.

Strategic goal #4
Sustainable development and gradual reduction in carbon intensity of production

KMG recognises the importance of its economic, environmental and social impact and will continue embedding sustainability principles into the key business processes in order to ensure the alignment of the Company's economic, environmental and social priorities and corporate governance targets.

The Company seeks to be in the top quartile across all ESG metrics and integrated ESG goals within the framework of strategic and medium-term KPIs for executives. The Company recognises its important social commitments inspired by principles of partnership with its employees and trade unions.

In 2021, KMG received a score from the Sustainalytics international rating agency, with its ESG risk rating assessed at 28.4. This means that KMG's risk was moved to the medium category.

KMG's key ESG challenges are carbon emissions from operating activities and emissions from using the Company's products, as well as community relations in our operating regions. By 2031, KMG aims to solidify its standing as a company with medium ESG risks.

Given the recent pandemic-related shocks and the Company's commitment to the well-being of people, employee health management is a standalone focus area for KMG.

With the climate agenda now a matter of strategic importance, the Company developed the 2022–2031 Low-Carbon Development Programme, setting out KMG's climate ambitions and key approaches and measures for carbon footprint reduction.

In striving for low-carbon production, KMG pursues a balanced approach, targeting a 15% reduction in direct and indirect CO_2 emissions by 2031 from the 2019 level. The Company also plans to implement renewable energy projects with a total capacity of at least 300 MW and take action to reduce carbon and energy intensity of production by more than 10%.

To achieve these strategic goals, KMG focuses on addressing end-to-end objectives in the areas of business process optimisation, project management, technology development, digitalisation, IT, HR and risk management while managing the assets through a holding company model.

The Company carefully selects and prioritises investment opportunities, considering only highly effective strategic projects for investments.

KMG is committed to prudent capital allocation and focuses on maximising benefits for the shareholders and respecting the interests of the government in the oil and gas industry.

The Company seeks to adhere to a conservative financial policy maintaining a balanced debt profile and securing a strong liquidity position.

By delivering on its four strategic goals, KMG will contribute to diversifying the national economy and reducing Kazakhstan's carbon footprint, which will help grow the Company, promote the well-being of people in Kazakhstan, and preserve the environment for generations to come.

KPI SYSTEM

The performance evaluation system is among the Company's strategic and day-to-day management tools that makes sure the Company's operations are aligned with its strategic goals.

The KPI system relies on the following principles:

- Balance between production, financial and economic KPIs and KPIs in the areas of sustainable development, corporate governance, social, and environmental aspects;
- Breakdown of strategic KPIs into operational KPIs and their cascading on a top-down basis along the organisational structure and by type of activity.

KPIs are also part of the motivation system for executives, with remuneration for the reporting year linked to progress against motivational KPIs.

Distribution of corporate and functional KPIs across the final performance by members of the Management Board, %:

Executives	Corporate KPIs	Functional KPIs
Chairman of the Management Board	100	0
Members of the Management Board (other than the Chairman of the Management Board)	70	30

Motivational KPIs include:

- corporate KPIs, which are common to all of the Company's Management Board members and heads of departments and are based on strategic targets and priorities for the reporting period;
- functional KPIs, which are individual KPIs of the Company's Management Board members and heads of departments and are based on important objectives set out for a specific leader.

KPIs and targets for members of KMG's Management Board are approved annually by KMG's Board of Directors. Performance evaluation for awarding bonuses is carried out after the Company has analysed its financial and economic results for the reporting year.

Motivational KPIs for 2021 were developed based on the sustained need for the management to focus on operational efficiency improvements and on ESG aspects of the Company's operations.

Set out below is performance against corporate KPIs in 2021:

No.	KPI	Unit	2021		Comment on performance in 2021
			Target	Actual[1]	
1	FCF available for development and distribution as dividends[2]	KZT bln	–176	360	Target met
2	Net asset value (NAV)	KZT bln	9,005	8,506	Above target[3]
3	Debt/EBITDA[4]	Ratio	4	2,4	Above target
4	Performance under investment projects	%	90	44	Below target
5	Operational efficiency improvement	%	94	98	Target met
6	ESG Rating	Rating	65	72	Above target
7	Local content across KMG Group[5]	%	71	77	Above target

[1] The final approval by the KMG Board of Directors of the actual values for 2021 is expected in June 2022, and therefore the values indicated in the table may be slightly adjusted.

[2] Cash flow from operating activities (excluding joint ventures and associates) less maintenance CAPEX.

[3] On November 9, 2021, KMG transferred 100% of the shares of KazTransGas JSC in favor of Samruk-Kazyna JSC. Therefore KazTransGas JSC was excluded from the consolidation perimeter. This factor was not taken into account when forming the planned NAV indicator. The actual figure with KazTransGas JSC is 10,255 bln tenge, which is higher than the plan.

[4] As per approved methodology of JSC Samruk-Kazyna.

[5] A composite indicator reflecting performance against local content targets set across KMG Group.

PERFORMANCE UNDER INVESTMENT PROJECTS

Investment portfolio overview

Today, KMG's investment portfolio includes projects across all areas of operations aimed at increasing the resource base and boosting the efficiency across the value chain. In 2021, the investment portfolio totalled KZT 58,890.5 bln, including KZT 14,872.7 bln attributable to KMG. As part of portfolio management, KMG continues efforts to prioritise its projects, with decisions on any new investments taking into account their viability, strategic priority level, risks, and capital intensity.

Type of project	2021 investment portfolio attributable to KMG	
	KZT bln	%
Oil and gas exploration and production[6]	13,918.2	93.6
Infrastructure projects	618	4.11
Oil transportation	143.5	1
Refining and marketing of oil products	95.2	0.64
Petrochemicals	94.2	0.63
Other	3.6	0.02
Total	**14,872.7**	**100**

KMG's investment portfolio includes a number of projects in conventional areas such as exploration, transportation and refining of oil, and in new realms, i.e. petrochemicals and sustainability. Green projects are expected to be added to the portfolio very soon.

2021 saw strong progress in terms of improving the investment attractiveness of our subsoil use projects. As requested by KMG, the Government of Kazakhstan considered and approved the cancellation of the export customs duty for offshore projects. This was part of the efforts to enhance the investment appeal of the oil and gas industry jointly with the Foreign Investors' Council and government agencies of Kazakhstan. The cancellation of the export customs duty for new and existing offshore oil and gas projects will deliver quick wins in terms of improving the industry's investment climate, launch field development, and ensure strong tax collection for Kazakhstan while also creating new jobs and increasing the share of local content in procurement.

Also, a discussion involving KMG, Foreign Investors' Council, and the Ministry of Energy is currently underway to develop an improved model contract for subsoil use projects to make the oil and gas industry more competitive.

Along with principal improvements in investment climate, KMG is also working to deliver against the targets currently at hand. In 2021, KMG successfully completed five investment projects in various areas:

- KPC gas debottlenecking (KGDBN);
- installation of the 4th injection compressor;
- construction and upgrade of a jack-up floating drilling rig;
- retail network development in the Black Sea region. Phase 1: construction of 25 filling stations in Romania in 2018–2020 (KMG International);
- construction of an air and nitrogen compressor for KPI Inc.

Oil and gas exploration and production

A considerable portion of KMG's investment portfolio relates to onshore and offshore oil and gas exploration and production projects. In 2021, upstream projects attributed to KMG totalled KZT 13,929 bln (93.6%).

The cancellation of the export customs duty will help to considerably improve the margins of existing offshore projects such as Abay, Isatay, Zhenis, and Al-Farabi, as well as new projects such as Kalamkas-Sea–Khazar.

As we mentioned in our Report for 2020, in October 2020, KMG and LUKOIL signed an agreement on the Al-Farabi project in Kazakhstan's sector of the Caspian Sea, defining the rights and obligations of KMG and LUKOIL regarding the operations of the future subsoil user under the project. In May 2021, we signed a hydrocarbon exploration and production contract for the Al-Farabi subsoil area. Al-Farabi Operating LLP obtained the subsoil use right under the contract and is now recognised a subsoil user. To date, all decisions regarding PJSC LUKOIL's involvement in the project have been duly adopted.

Also, in November 2021, KMG and PJSC LUKOIL signed a principles agreement on the Kalamkas-Sea–Khazar promising offshore project. Further negotiations are expected to define the concept, details, and terms and conditions for the joint development of the field. The project will help secure new reserves additions through inorganic growth in the form of contracts to engage in production at new fields.

[6] Including projects implemented at large oil and gas assets.

To successfully run its offshore projects, KMG develops respective service infrastructure. In 2021, the Company completed an upgrade of Kazakhstan's first jack-up floating drilling rig Satti. This was a joint project with Caspian Drilling Company Ltd and British Petroleum.

Work continues to add new reserves through further exploration at existing onshore fields. As an example, we go on with our efforts in exploration at the S. Nurzhanov and West Karasor fields to increase hydrocarbon reserves. At East Urikhtau and the Rozhkovskoye field development project, pilot production is ongoing, with start of commercial production expected in 2023–2024.

2021 saw another addition to our portfolio: Turgai Palaeozoic, a project that will see the drilling of a 5,500 m deep exploration well. The block is located in the Kyzylorda Region. In August 2021, a hydrocarbon exploration and production contract was concluded, and preparatory work is ongoing to have the exploration well drilled.

KMG continues to partner with strategic investors in projects at large fields: Tengiz (20%), Kashagan (16.88%) and Karachaganak (10%).

At Tengiz, the Company is implementing the future growth project / wellhead pressure maintenance project.

Projects to maintain production plateau at the Karachaganak field are progressing as planned. In 2021, we successfully completed the KPC gas debottlenecking (KGDBN) project. The installation of the 4th injection compressor (4ICP) project is now nearing completion.

Oil transportation

In 2021, KMG's oil transportation projects totalled KZT 143.5 bln (1%).

During the year, the objective of Phase 2 of the second stage of the Kazakhstan–China oil pipeline construction was achieved, with throughput increase to 20 mtpa. As part of the project, we launched the first stage of flow reversal at the Kenkiyak–Atyrau oil pipeline section with a throughput of up to 6 mtpa.

Our key initiative here is the project to remove bottlenecks in Caspian Pipeline Consortium's oil pipeline system, which will help increase the CPC pipeline's throughput capacity to 72.5 mtpa.

Refining and marketing of oil products

The Kazakh-Romanian Investment Fund KMG International N.V. is completing the construction of 25 filling stations (Phase 1) in Romania to build a retail network for the sale of oil products.

To ensure energy security of Kazakhstan's northern and eastern regions, KMG following the review of a feasibility study in 2021 launched projects at Pavlodar Refinery to remove sulphur compounds from LPG and make winter diesel fuel. These projects are designed to reduce the emissions of hazardous substances into the environment, increase the output of light products, and improve the product slate of Pavlodar Refinery. The units are scheduled for launch in 2023 and 2024, respectively.

In 2021, KMG's projects in refining and marketing of oil products totalled KZT 95.2 bln (0.64%).

Petrochemicals

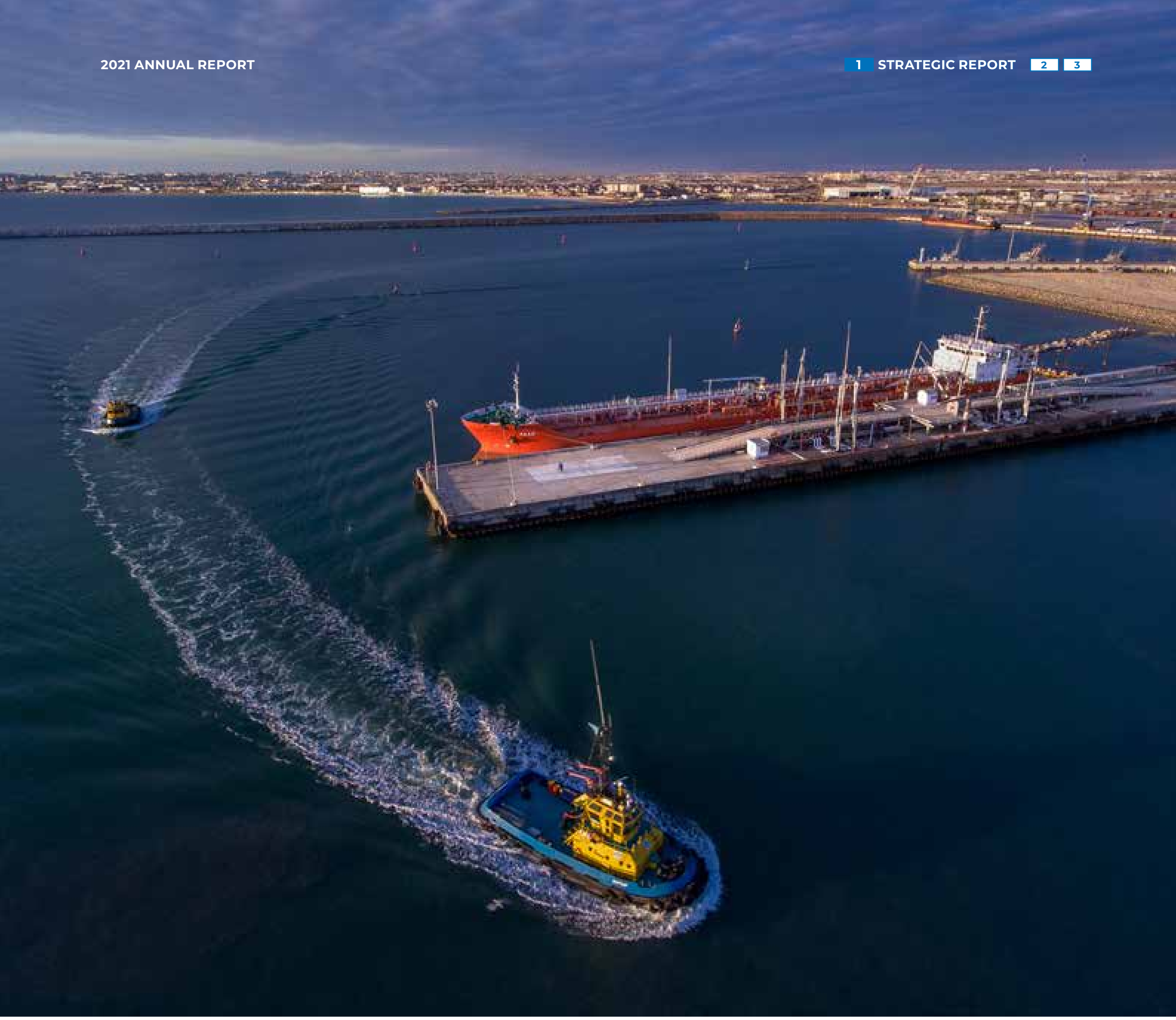
KMG is focused on creating a petrochemical industry in Kazakhstan, which marks a transition to a new level in the national company's development. In 2021, KMG's petrochemicals projects totalled KZT 94.2 bln (0.63%). In Q1 2022, KMG is to complete the construction of a polypropylene plant with a capacity of 500 ktpa. At the same time we are engaged in projects to produce polyethylene and butadiene with partners that have relevant expertise and experience.

In 2021, we completed an infrastructure project to build an air and nitrogen compressor for KPI Inc. at the National Industrial Petrochemical Technopark, a special economic zone.

Infrastructure projects

As a national company, KMG runs projects that are aimed at:

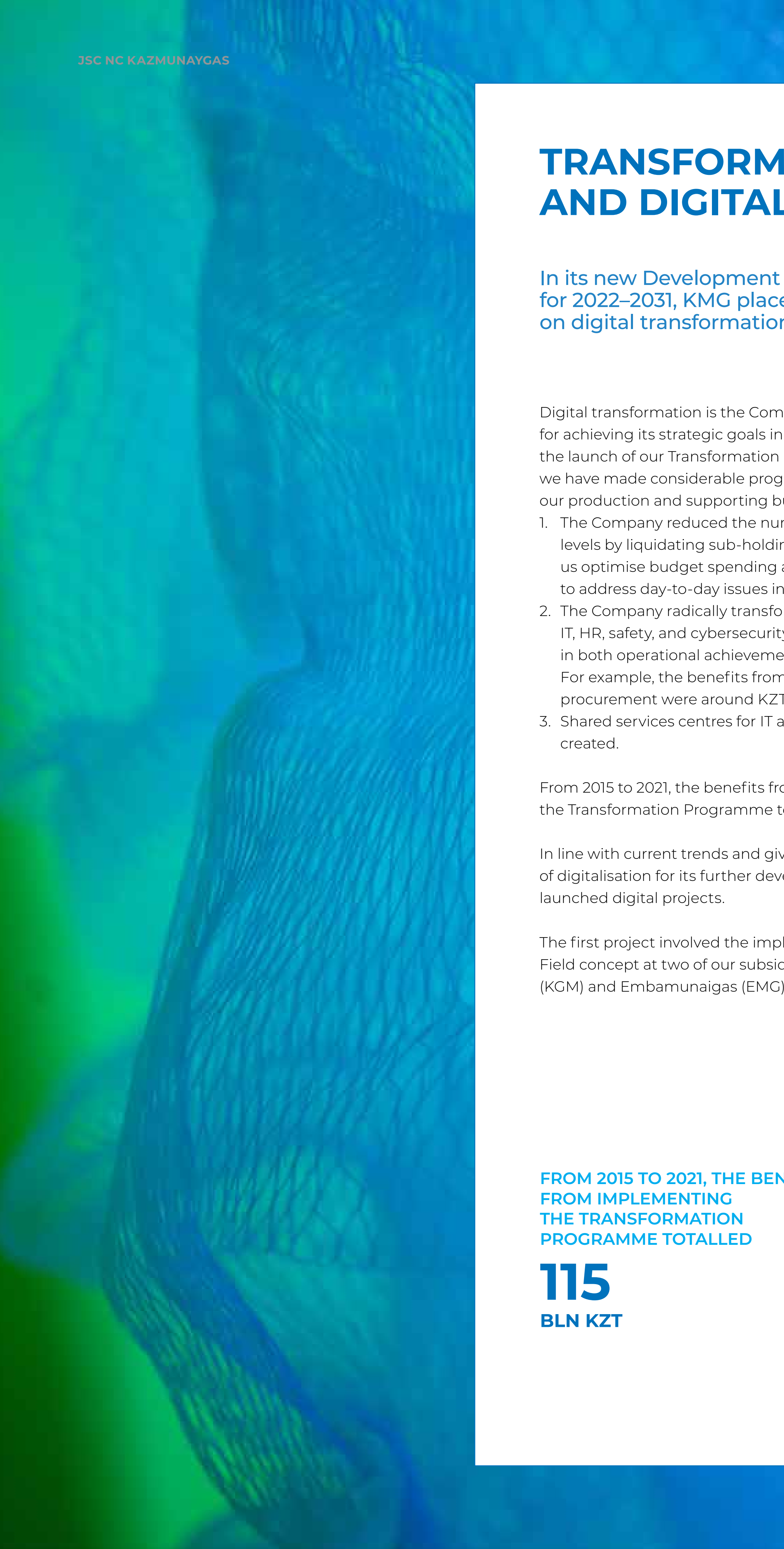
- addressing water supply issues in its regions of operation, such as an upgrade of the Astrakhan–Mangyshlak water pipeline and construction of a desalination plant in Kenderly with a daily capacity of 50,000 m^3. The Astrakhan–Mangyshlak water pipeline upgrade project is currently at the design and estimate documentation stage, with efforts in progress to raise financing. As part of the Kenderly desalination plant project, tender procedures are soon to be completed to select a project management consultancy services provider to ensure technical support of the project;
- ensuring uninterrupted gas processing, including as a way to meet the needs of local residents.



A project to build a new gas processing plant in Zhanaozen is currently at the pre-FEED and feasibility study development stage. An environmental impact assessment is now underway, along with screening for impacts of the planned activity. Preparatory work is ongoing to ensure project financing. The project is slated for completion in early 2024;

- improving the environment: Tazalyq project at Atyrau Refinery. In 2021, contracts for construction, project management, technical supervision, and site supervision for Phases 1 and 3 were signed. Installation and construction work is ongoing.

In 2021, KMG's infrastructure projects totalled KZT 618 bln (4.11%).



TRANSFORMATION AND DIGITALISATION

In its new Development Strategy for 2022–2031, KMG places a special focus on digital transformation.

Digital transformation is the Company's priority tool for achieving its strategic goals in the modern world. Since the launch of our Transformation Programme in 2015, we have made considerable progress in re-engineering our production and supporting business processes:

1. The Company reduced the number of management levels by liquidating sub-holdings. This helped us optimise budget spending and made it possible to address day-to-day issues in a more expedient manner.
2. The Company radically transformed its procurement, IT, HR, safety, and cybersecurity frameworks. It resulted in both operational achievements and financial benefits. For example, the benefits from category-based procurement were around KZT 10 bln in 2016–2020.
3. Shared services centres for IT and HR management were created.

From 2015 to 2021, the benefits from implementing the Transformation Programme totalled KZT 115 bln.

In line with current trends and given the importance of digitalisation for its further development, KMG has already launched digital projects.

The first project involved the implementation of the Smart Field concept at two of our subsidiaries – Kazgermunai (KGM) and Embamunaigas (EMG). At KGM, telemechanics

FROM 2015 TO 2021, THE BENEFITS FROM IMPLEMENTING THE TRANSFORMATION PROGRAMME TOTALLED

115

BLN KZT

were introduced at key wells, centralised control systems were implemented, and two situation centres now operate (in the headquarters and at the field). All this allows real-time streamlining of processes and helps identify losses, improve equipment performance, and ensure a high level of safety.

EMG generated a digital model for seven fields. Smart control stations are in place for online detection of deviations at each well and monitoring of maintenance crews' work.

In oil exploration and production, digitalisation is based on the ABAI information system. ABAI consolidates KMG Group's operational information into a single database and can verify and analyse it using artificial intelligence, machine learning and instant visualisation tools.

Five system modules were launched for testing in 2021.

1. ABAI Database is an in-house data import and storage system. It also generates production reports and ensures prompt access to all KMG exploration and production data.
2. The Visualisation Centre module consisting of three dashboards is designed for the visualisation and monitoring of production and strategic performance indicators (for example, daily production by subsidiaries).
3. The Well Operation Mode algorithms analyse the performance and calculate potentials of wells, thus ensuring more efficient distribution of planned oil production among wells and reservoirs, and, accordingly, optimising field development. The module operation is based on actual data from KMG's own database, current and potential bottom-hole pressure and the productivity index. These values are used to calculate the maximum potential oil volumes given the existing geological and technical conditions. During the testing period from May to October 2021 alone, 560 tonnes were added to the output at 13 wells of KGM.
4. The Monitoring of Process Complications module enables a tailored approach to injecting corrosion inhibitors and determining their dosage based on the actual corrosion rate at fields of OzenMunaiGas (OMG). This increases equipment reliability (due to to a higher effectiveness of the inhibitor) and reduces spending on chemicals. In about six weeks, the testing helped to save more than KZT 5 mln at three facilities.
5. The Selection of Downhole Pumping Equipment module will enable more rapid and robust selection of pumps through automated data processing. The module optimises DPE, well operation, and assessment of the potential of newly drilled wells. For example, a correctly selected DPE arrangement will reduce equipment failure rates and the number of well workovers at JSC Mangistaumunaigaz (MMG) by 4%.

During the second project phase, twelve more ABAI modules will be developed to digitalise key oil production processes – from exploration to drilling to production to economic effect assessment.

The Transformation emphasises on enhancing digital and design skills, as well as employee motivation. So, the implementation of the Lean 6 Sigma (LSS) programme involves employee training and certification at KMG Group's production assets. A total of 13 LSS projects were implemented in oil production, generating a benefit of KZT 72 mln.

The LSS programme was previously successfully implemented at refineries. Since 2016, 156 projects have been implemented under the programme at refineries, with a direct economic effect of KZT 1,247 mln due to lower reagent, steam and power consumption and reduced repair costs. 89 employees have been trained and certified. At the National

DURING THE TESTING PERIOD FROM MAY TO OCTOBER 2021 ALONE

560 TONNES
WERE ADDED TO THE OUTPUT AT
13 WELLS OF KGM

AT THREE FACILITIES IN ABOUT SIX WEEKS, THE TESTING HELPED SAVE MORE THAN

MORE THAN 5 MLN KZT

Competition Qazaqstan Project Management Awards, the implementation of Lean 6 Sigma programme project in oil refining and petrochemistry was named Kazakhstan's best project in 2021.

We plan to roll out the programme with a focus on digitalisation (Lean Digital). This means that LSS tools will be used to develop business initiatives aimed at reducing operational wastes by using custom digital solutions.

The implementation of the Bank of Ideas platform at MMG will facilitate the development of an innovation culture at operating assets and address critical operational issues at KMG subsidiaries, involving those who participate in the relevant processes on a daily basis.

Three KMG refineries in Kazakhstan are introducing computer simulators. Operators of refinery units use digital twins to simulate emergencies or routine operations, thus minimising process disruptions caused by human error and enhancing workplace safety.

Simulators have been launched on the delayed coker, isomerisation unit and naphtha splitter, diesel hydrotreating plant, and kerosene

A TOTAL OF 13 LEAN 6 SIGMA PROJECTS WERE IMPLEMENTED IN OIL PRODUCTION, GENERATING A BENEFIT

72 MLN KZT

SINCE 2016, 156 PROJECTS HAVE BEEN IMPLEMENTED UNDER THE LEAN 6 SIGMA AT REFINERIES, WITH A DIRECT ECONOMIC EFFECT

OF 1.2 BLN KZT

hydrotreater at Pavlodar Refinery, catalytic reformer at Shymkent Refinery, catalytic cracking unit, catalytic reformer, and aromatic hydrocarbon production facility at Atyrau Refinery. Such simulators are expected to cover a total of 21 units.

In 2021, the Oil Refining and Petrochemicals segment completed the creation of a digital General Plan and 3D model of refineries. All facilities were laser-scanned, and the database of working and design drawings of two refineries (over 600,000 documents) was digitised. All the information was consolidated within the 3D General Plan, a new engineering data management system providing access to relevant and exhaustive digital data. It will be used to repair, remodel and design new facilities, resulting in time and cost savings, as well as improving the quality of this work.

The shared services centre (SSC) is a project that demonstrates the need to transform not only production facilities but also back office operations. The SSC will be used to transform accounting and tax reporting, treasury, HR management, and administrative and documentary support processes.

Automation of day-to-day processes will help to free up employees and direct their potential in a more efficient manner. In addition, SSC provides instant access to such information as liquidity, personnel turnover and more.

During the year, KMG and its subsidiaries continued to implement the project management system (PMS). In particular, we launched the Stage Gate Process and a process for comprehensive feasibility study.

The number of companies implementing project management as a priority increased from six to 20, with the list of key projects also expanded. A process was conducted to establish project teams for key projects. We approved methodological documents for our Corporate Project Management System, as well as expert review and risk management guidelines. Finally, we held management training sessions and certification of project managers, and organised a basic project management course for employees of the corporate centre, subsidiaries and associates.

In the coming period, the transformation will be focused on promoting digital technologies in exploration (seismic survey and well analysis) using machine learning and artificial intelligence, as well as on creating a corporate template for new assets digitalisation (a “digital twin”).

Other digital transformation priorities are the environment, occupational health and safety, process reliability, and cost reduction. Particular attention will be paid to improving the digital literacy of KMG employees and young talent as part of the Zhas Orken and Digital Summer internship and apprenticeship programmes.

OPERATING REVIEW

KMG is the national leader in Kazakhstan's oil and gas industry with a fully integrated value added chain

The proved reserves (1P) life is 16.5 years, far exceeding the average for global oil majors (about 11 years).

RESERVES

According to the reserves audit report prepared by the international independent consulting firm DeGolyer and MacNaughton in accordance with the PRMS international standard, KMG's proved plus probable hydrocarbon reserves (2P) were 645 mln toe (4,983 mln boe) as at 31 December 2021. 2P reserves increased by 1.8% year-on-year. The increase is mainly attributable to comprehensive initiatives in hydrocarbon reserves management, including recalculation of hydrocarbon reserves at the Uzen, Kashagan and other fields, as well as positive macroeconomic changes (higher oil price).

The proved reserves (1P) life is 16.5 years, far exceeding the average for global oil majors (about 11 years).

Net reserves[1] under PRMS (as at 31 December 2021)

Hydrocarbon reserves, mln boe

Year	Proved (1P)	Proved plus Probable (2P)	Proved plus Probable plus Possible (3P)
2021	3,694	4,983	5,869
2020	3,550	4,894	5,832
2019	3,860	5,220	6,089

Hydrocarbon reserves, mln toe

Year	Proved (1P)	Proved plus Probable (2P)	Proved plus Probable plus Possible (3P)
2021	477	645	761
2020	459	635	757
2019	499	676	790

EXPLORATION

KMG pursues its previously developed strategy for exploration and reserve growth.

Exploration costs totalled KZT 20.7 bln (excluding shares) in 2021, up KZT 2.7 bln year-on-year. The cost growth was mostly driven by CAPEX for developing new promising fields, maintaining the current production level and replenishing reserves in the medium term.

Reserve replacement

through organic and inorganic growth

- Exploration at current contract areas
- Further exploration of producing assets
- Prospect evaluation and acquisition

Finding strategic partners

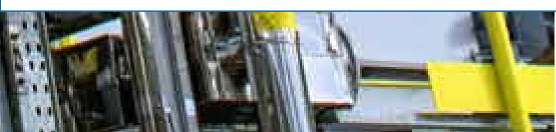
for joint exploration projects

- Attraction of foreign investments
- Knowledge and technology transfer
- Risk optimisation

Improvement

of exploration performance

- Improvement of available technologies and deployment of new technologies
- Process digitalisation
- Implementation of a project management system in exploration



[1] Net Reserves are defined as the portion of gross reserves attributable to (1) the interest held by KMG after deducting all interests held by others, and (2) interests that are not held, but controlled by KMG.

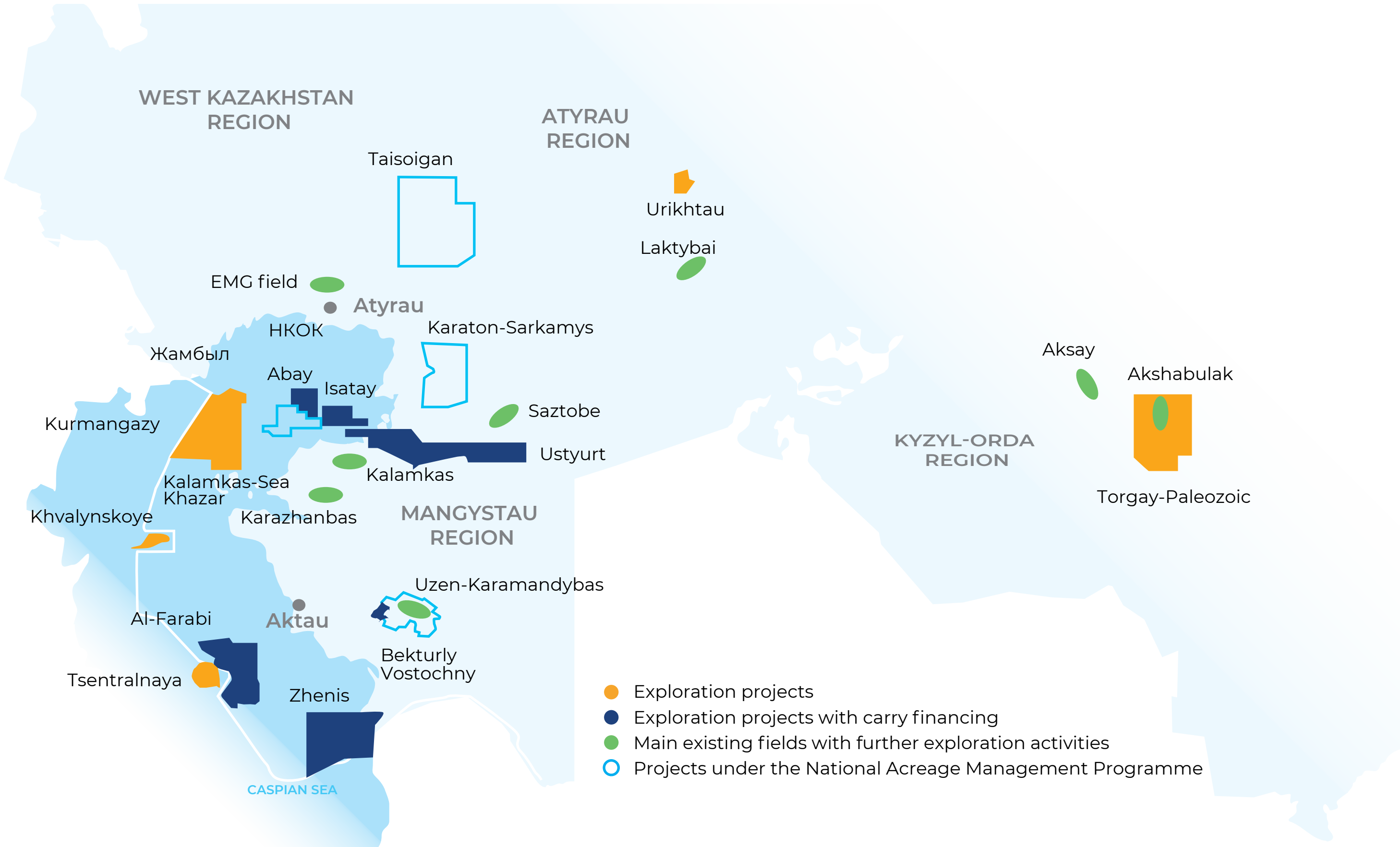
2021 highlights

- The drilling and development of appraisal well No. 8 following a 3D high-resolution seismic survey at the East Zhetybay field produced 38 tonnes per day in a gushing flow of Jurassic oil. The presence of oil was proved for the field's western block, which had not been developed previously.
- The drilling and development of appraisal well No. 42 following a 3D high-resolution seismic survey at the South Zhetybay field produced 36 tonnes per day in a flow of Jurassic oil. The presence of oil was proved in a previously unexplored horizon.
- The drilling and development of three appraisal wells following a 3D high-resolution seismic survey on edges of the Kalamkas field produced 30 tonnes per day in a flow of Jurassic oil. We found horizons that had been previously missed and obtained more exact information on the structure of productive horizons in the edge areas.
- Following surveys, the location of the first offshore exploration well on the Zhenis site was adjusted and approved with drilling scheduled for 2022.
- In late December 2021, the Company started drilling an exploration well on the Bekturly Vostochny block.
- As part of the search for new exploration and follow-up exploration areas jointly with KMG International, we identified ten prospective targets for development in the short and long term.
- New oil deposits were found during further exploration at Uzen in the Mangystau Region. As a result, the recoverable reserves grew by 39.9 mln tonnes.

New exploration projects

In 2021, two greenfields (Al-Farabi and Turgai Palaeozoic) were assigned to the Company on the government's list for the National Acreage Management Programme. Three more projects – Karaton-Sarkamys, Taisoigan, and Uzen-Karamandybas – are expected to be included in the Programme's list soon.

A new project involving the exploration of Palaeozoic deposits in the South Turgai basin is based on a comprehensive approach using basin modelling and changes in the conventional concept of the region's subsurface geology. As of today, the Turgai Palaeozoic project has been approved by KMG's Investment Committee



and the exploration well drilling programme has been submitted for corporate approval.

The Company seeks to attract strategic partners for joint exploration of Uzen-Karamandybas, Taisoigan, and Karaton-Sarkamys.

As part of a virtual data room, we conduct joint studies of sedimentary basins, attract partners for joint exploration and development of the existing assets, and for contributing to the National Acreage Management Programme. Over ten data rooms were held for potential partners: potential collaborations are being negotiated with PJSC Tatneft, CNPC, CJSC Zarubezhneft, etc. We continue our cooperation with PJSC LUKOIL under a joint exploration agreement.

Deploying new technologies, optimising exploration, and improving performance

Since 2017, we have been successfully deploying the high-resolution 3D seismic survey technology at major fields (Kalamkas, Uzen, Zhetybai) and other fields such as Asar, Burmasha, South Zhetybai, East Zhetybai, etc. Such surveys helped identify new targets, which had been previously considered of little promise, and succeed in drilling appraisal wells in the fields' edge areas.

To address geological issues at the existing assets, we plan to employ the latest global geophysical solutions for 2D and 3D seismic data processing (3D Multiple, SWIM, FWI, etc.). Implementation of seismic data interpretation technologies (ResOP, forecasts powered by neural networks, inversion analysis of seismic data) is also underway.

Exploration	2019	2020	2021
2D seismic, linear km	240	–	1,099
3D seismic, sq km	6,928	347	2,982
Number of wells drilled	39	19	15

Expansion of partnership projects

Al-Farabi

Subsoil user under the contract is Al-Farabi Operating LLP with the following ownership structure:

- JSC NC KazMunayGas – 50.01% in the authorised capital of Al-Farabi Operating LLP;
- PJSC LUKOIL – 49.99% in the authorised capital of Al-Farabi Operating LLP.

During the period stretching from the commencement of exploration until approval of the field development project, the funding is provided by PJSC LUKOIL covering 100% of project costs on the basis of carry-financing under the Financing Agreement dated 11 November 2021 between JSC NC KazMunayGas and Eni Isatay B.V.

Zhenis project

with the following participants:

- JSC NC KazMunayGas – 50% of subsoil use rights;
- LUKOIL Kazakhstan Upstream LLP – 50% of subsoil use rights.

The project operator is Zhenis Operating LLP.

During the period of exploration, the funding is provided by LUKOIL Kazakhstan Upstream LLP covering 100% of project costs on the basis of carry-financing under the Financing Agreement between JSC NC KazMunayGas and LUKOIL Kazakhstan Upstream LLP.

Isatay project

with the following participants:

- JSC NC KazMunayGas – 50% of subsoil use rights;
- Eni Isatay B.V. – 50% of subsoil use rights.

The project operator is Isatay Operating Company LLP.

During the period of exploration, the funding is provided by Eni Isatay B.V. covering 100% of project costs on the basis of carry-financing under the Financing Agreement between JSC NC KazMunayGas and Eni Isatay B.V.

Abay project

with the following participants:

- JSC NC KazMunayGas – 50% of subsoil use rights;
- Eni Isatay B.V. – 50% of subsoil use rights.

The project operator is Isatay Operating Company LLP.

During the period stretching from the commencement of exploration until approval of the field development project, the funding is provided by Eni Isatay B.V. covering 100% of project costs on the basis of carry-financing under the Financing Agreement between JSC NC KazMunayGas and Eni Isatay B.V.

Bekturly Vostochny project

with the following participants:

- JSC NC KazMunayGas – 50% of subsoil use rights;
- Kokel Munay LLP – 50% of subsoil use rights.

The project operator is Becturly Energy Operating LLP.

During the period of exploration, the funding is provided by Kokel Munay LLP covering 100% of project costs on the basis of carry-financing.

Turgai project

with the following participants:

- JSC NC KazMunayGas – 100%.

Currently, the Turgai project is implemented by KMG at its own expense.

Khvalysnkoye project

with the following participants: In 2005, authorised entities from Kazakhstan and Russia, JSC NC KazMunayGas and PJSC LUKOIL respectively, established a 50/50 joint venture, Caspian Oil and Gas Company, which will be the authorised subsoil user under the Khvalynskoye project once the Production Sharing Agreement is executed.

The project funding is provided by JSC NC KazMunayGas and PJSC LUKOIL in the form of loans at an interest on a parity basis.

Tsentralnaya project

with the following participants:

- JSC NC KazMunayGas – 50%;
- TsentrCaspneftegaz LLC (a 50/50 joint venture of PJSC LUKOIL and PJSC Gazprom) – 50%.

The operator and subsoil user is Central Oil and Gas Company LLC incorporated in the Russian Federation.

During the period of exploration, the funding is provided by TsentrCaspneftegaz LLC covering 100% of project costs on the basis of carry-financing.

Kurmangazy project

with the following participants:

- JSC MNC KazMunayTeniz – 50% share in the PSA;
- RN-Exploration LLC (wholly-owned subsidiary of Rosneft) – 50% share in the PSA.

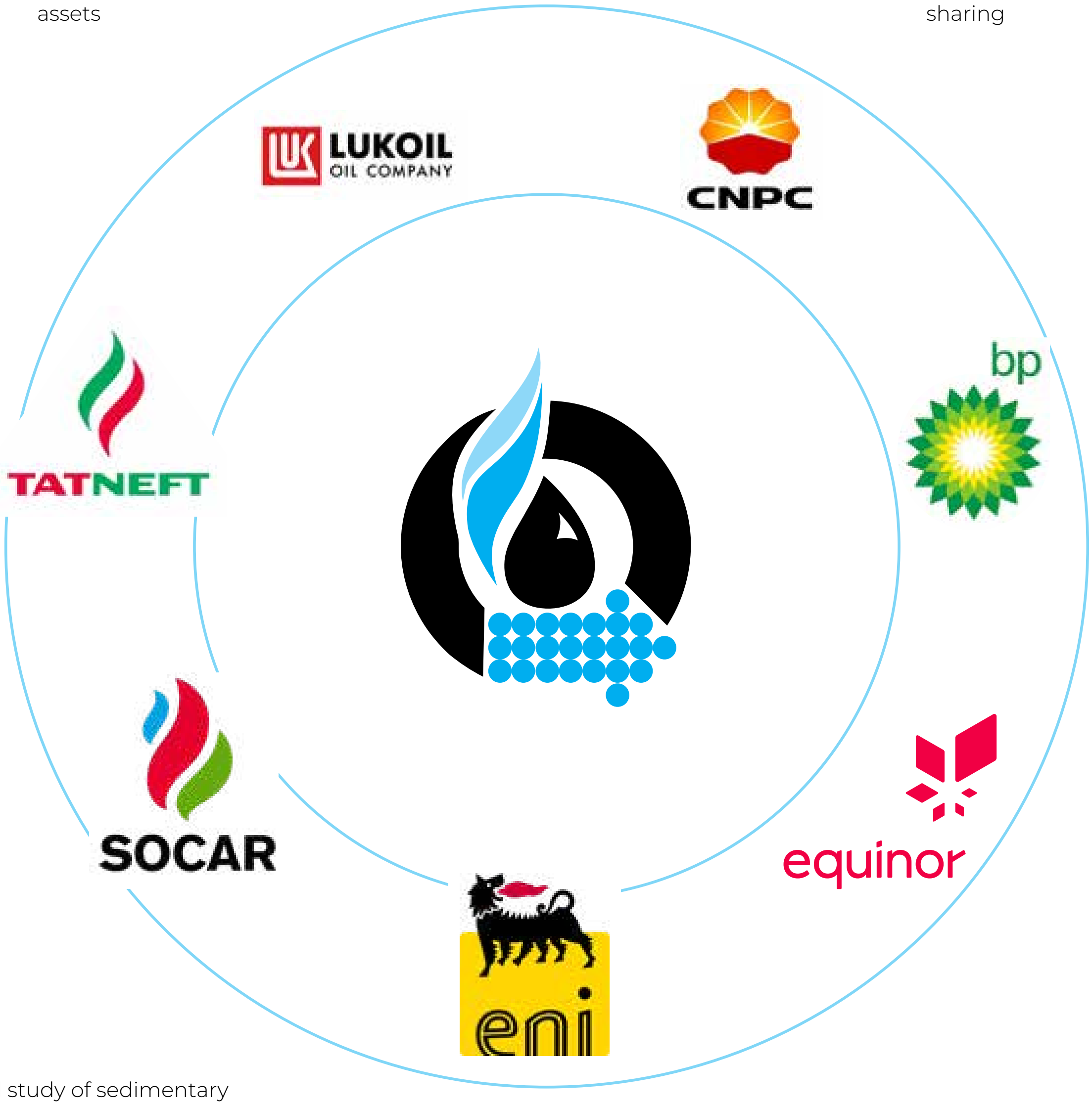
The project operator is Kurmangazy Petroleum LLP, a wholly-owned subsidiary of JSC NC KazMunayGas.

The project funding is provided by JSC NC KazMunayGas and RN-Exploration LLC on a parity basis – 50% of costs each.

R&D COOPERATION WITH INTERNATIONAL PLAYERS

Joint evaluation of exploration assets

Knowledge and technology sharing



Regional study of sedimentary basins

Multiple MOUs signed

UPSTREAM

In 2021, KMG continued to honour its commitment under the OPEC+ agreement to cut production as a way to rein in global oil demand and prices.

In order to maintain social and financial stability in some regions of operation, the Company partnered with Kazakhstan's Ministry of Energy to redistribute oil production restrictions within KMG Group.

Oil and gas are produced by KMG's operating assets and megaprojects where KMG has non-operating interests.

KMG participates in three major oil and condensate production projects in Kazakhstan, with interests of 20%, 10% and 8.44% in Tengiz, Karachaganak and Kashagan, respectively.

The Company partners with the world's oil giants to deliver on its megaprojects. These giants include Chevron Corporation, Exxon Mobil Corporation, Royal Dutch Shell plc, Eni S.p.A., TOTAL S.A., INPEX CORPORATION, China National Petroleum Corporation (CNPC) and LUKOIL.

Production assets

Operating assets	KMG's interest, %
JSC OzenMunaiGas	100
JSC Embamunaigas	100
JSC Mangistaumunaigaz	50
JSC Karazhanbasmunai	50
JV Kazgermunai LLP	50
JSC PetroKazakhstan Inc.	33
Kazakhturkmunay LLP	100
Kazakhoil Aktobe LLP	50
Amangeldy Gas LLP (condensate)	100
Urikhtau Operating LLP	100

Non-operating assets (megaprojects)	KMG's interest, %
Tengizchevroil LLP	20
North Caspian Operating Company N.V.	8.44
Karachaganak Petroleum Operating B.V.	10

Oil production

In 2021, as part of Kazakhstan's commitment to cut oil supply under the OPEC+ agreement, KMG reduced its oil and condensate output by 900 ths tonnes vs the previously approved annual targets. KMG's total output was 21.6 mln tonnes or 444 ths bbl per day, down 0.5% year-on-year. Despite that, KMG remains the national leader in Kazakhstan's oil and gas industry, accounting for one third of the country's oil and condensate production.

KMG has a balanced portfolio of upstream assets with a significant growth potential. The share of operating projects and megaprojects in its total oil and condensate production was 64% (14 mln tonnes) and 36% (7.7 mln tonnes), respectively.

Oil and gas condensate production, ths tonnes

Indicator	2019	2020	2021
Oil and gas condensate production	**23,618**	**21,752**	**21,654**
Operating assets	**15,476**	**14,113**	**13,965**
JSC OzenMunaiGas	5,586	5,347	5,332
JSC Embamunaigas	2,900	2,601	2,522
JSC Mangistaumunaigaz	3,204	2,977	2,944
JV Kazgermunai LLP	1,114	778	727
JSC Karazhanbasmunai	1,082	1,001	1,048
JSC PetroKazakhstan Inc.	844	661	600
Kazakhoil Aktobe LLP	320	295	298
Kazakhturkmunay LLP	409	432	434
Amangeldy Gas LLP (KTG)	17	15	14
Urikhtau Operating LLP	0	6	47
Megaprojects	**8,142**	**7,639**	**7,654**
Tengizchevroil LLP	5,958	5,292	5,311
KMG Kashagan B.V.	1,169	1,253	1,344
KMG Karachaganak LLP	1,015	1,094	1,034

Oil and gas condensate production, ths bbl per day

Indicator	2019	2020	2021
Oil and gas condensate production[1]	**485**	**445**	**444**
Operating assets	**307**	**279**	**277**
JSC OzenMunaiGas	111	106	106
JSC Embamunaigas	58	52	50
JSC Mangistaumunaigaz	63	59	58
JV Kazgermunai LLP	23	16	15
JSC Karazhanbasmunai	20	18	19
JSC PetroKazakhstan Inc.	18	14	16
Kazakhoil Aktobe LLP	7	6	6
Kazakhturkmunay LLP	8	9	9
Megaprojects	**178**	**166**	**168**
Tengizchevroil LLP	130	115	116
KMG Kashagan B.V.	25	27	29
KMG Karachaganak LLP	22	23	22

[1] Assuming individual average weighted bbl/tonne conversion rates used for each asset.

Planned and actual production including OPEC+ cuts, ths tonnes

Indicator	2021		
	Production target	Actual output, including OPEC+ cuts	Variance
Oil and gas condensate production	22,588	21,654	–934
Operating assets	14,471	13,965	–506
Megaprojects	8,117	7,688	–436

Parameters of KMG production assets

Assets	Porosity	API density	Sulphur content, %	Number of fields	Average flow rate of new wells, tonnes/day	Average flow rate of current producing well stock, tonnes/day	Oil barrelisation ratio, bbl/tonne
Ozenmunaigas	0.19	36.51	0.14	2	11.2	4.2	7.23
Embamunaygas	0.27	32.03	0.62	33	12.2	3.7	7.3
Karazhanbasmunai	0.32	19.81	2.00	1	2.13	2.13	6.68
Kazgermunai	0.26	39.95	0.1	5	19.5	28.3	7.38
Petro Kazakhstan Inc.	0.09-0.30	51.25	0.03-0.08	19	11-18.2	0.9-30.4	7.75
Mangistaumunaigaz	0.14	30.77	0.2	15	9.7	5	7.23
Kazakhoil Aktobe	0.085	38.89	1.12	2	45.3	16.3	7.516
Kazakhturkmunay	0.14	36.12	3.17	6	-	39.4	7.21
Urihktau Operating	0.1	41.7	0.7	3	46.5	75.1	7.717

The technical characteristics of the produced oil differ significantly from region to region. The heaviest oil is produced in Karazhanbasmunai, with a bbl ratio of 6.68 bbl. per ton. The lightest at PetroKazakhstan Inc. with a bbl ratio of 7.75 bbl. per ton.

The quality of crude oil can be determined by two main parameters: high API gravity and low sulfur content. The sulfur content of the CPC Blend brand (KMG's main megaprojects) is 0.56%, the density in API degrees is 45.3, thus it can be considered as one of the best oil in the world in terms of quality.

Crude oil brand	API Gravity	Sulfur content, %
CPC Blend (Kazakhstan, Novorossiysk)	45.3	0.56
West Texas Int. (USA, Cushing)	40.0	0.42
Arab Extra Light (Saudi Arabia)	39.4	1.09
Brent (UK)	37.5	0.40
Urals (Russia, Novorossiysk)	31.3	1.36

Data is from open sources of S&P Global Platts

Megaprojects

KMG develops world-class projects through partnerships with international oil and gas companies.

Tengiz

The largest gem in Kazakhstan's oil and gas industry, a unique supergiant oil field unrivalled elsewhere in the world.

The agreement on Tengizchevroil LLP was signed between the Republic of Kazakhstan and Chevron Corporation on 2 April 1993, with a 40-year hydrocarbon exploration and production licence granted to Tengizchevroil in 1993. Tengizchevroil focuses on the exploration, production and sales of hydrocarbons from the Tengiz and Korolevskoye fields in the Atyrau Region.

Tengizchevroil LLP (TCO) operates a licence that includes the unique supergiant Tengiz field and the adjacent Korolevskoye field with significant reserves. The Tengiz oil field was discovered in 1979. It is the world's deepest supergiant oil field.

Currently, oil is produced and processed by highly reliable modern operating facilities, including complex technology lines (CTL,

Oil production (total)	**26,553 ths tonnes (580 ths bbl per day)[1]**
Oil production (attributable to KMG) (20%)	**5,311 ths tonnes (116 ths bbl per day)**
Outlook	**Implementation of the USD 45.2 bln Future Growth Project / Wellhead Pressure Maintenance will boost oil production from the Tengiz field by 12 mtpa**
2P oil reserves life	**Over 20 years**
Associated gas production (total), including gas consumed in own operations and gas reinjection	**14.8 bln m^3**
Interests	**KMG (20%), Chevron (50%), ExxonMobil (25%), LUKOIL (5%)**
Operator	**Tengizchevroil LLP**

13.48 mln tonnes of oil processed in 2021), Second-Generation Plant (SGP, 13.07 mln tonnes of oil processed in 2021) and sour gas injection unit (SGI, 2.98 bln m^3 of gas handled in 2021). The well stock currently comprises 200 production wells and 8 gas injection wells.

In 2021, oil output increased by 0.4% year-on-year to 26,553 ths tonnes (including KMG's share of 5,311 ths tonnes), while gas output was up 0.1% year-on-year to 14.8 bln m^3 (including KMG's share of 2.95 bln m^3). Higher production was attributable to the suspension of OPEC+ restrictions in the second half of 2021 and completion of the large-scale SGP/SGI overhaul four days ahead of the schedule, which resulted in the incremental production of 238 ths tonnes of oil (including KMG's share of 47.6 ths tonnes).

Tengizchevroil's operational highlights

Year	Oil production, ths tonnes	Associated gas production, mln m^3	Dry gas production, mln m^3	Liquefied petroleum gas (LPG) production, ths tonnes	Sulphur production, ths tonnes	Gas injection, mln m^3
2019	29,791	16,290	9,471	1,348	2,589	3,655
2020	26,457	14,748	8,674	1,482	2,451	3,069
2021	26,480	14,767	8,717	1,449	2,493	2,982

Progress on the Future Growth Project and the Wellhead Pressure Management Project

Tengizchevroil is implementing two integrated projects – the Future Growth Project (FGP) and the Wellhead Pressure Management Project (WPMP). The two projects make a significant contribution to the national economy: FGP–WPMP has generated around 48,000 jobs in Kazakhstan, with about 1,000 more permanent jobs to be added to support the operation of FGP–WPMP. The implementation of the projects will boost oil production from the Tengiz field by 12 mtpa.

At the end of 2021, the total cost of FGP–WPMP was USD 38.3 bln, with the overall project progress at 89%. Under the updated 2021 schedule, the launch of the WPMP and FGP facilities is slated for March 2023 and November 2023, respectively.

As at 1 January 2022, general construction progress was 82.6% (target – 81.9%), engineering design – 100.0% (target – 100.0%), management systems and power supply – 97.1% (target – 99.5%), well drilling – 94,6% (target – 94.2%), logistics – 100%, procurement – 100% (target – 100%), module manufacturing – 100%, systems completion – 12.5% (target – 17.7%).

All process modules have been placed on the foundations, construction and installation for the Single Centre for Process Management have been completed, and new group metering stations have been commissioned (GZU-53 and GZU-54 in February and September, respectively).

In Q1 2022, Tengizchevroil and the Partners plan to assess the project schedule and costs based on the 2021 progress, with the final dates for FGP facilities commissioning to be announced in Q2 2022.

[1] 1 tonne = 7.98 bbl

Works scheduled for 2022:

- Migrating and launching the Single Centre for Process Management
- Commissioning GZU-55
- Supplying fuel gas for pre-commissioning at FGP energy assets
- Completing construction and installation at the Third Generation Raw Gas Injection power plants
- Powering the Third Generation Raw Gas Injection power plants
- Completing mechanical works to lay Pressure Maintenance System pipelines
- Completing works to lay Pressure Maintenance System cables
- Completing construction and installation at raw gas injection drilling sites
- Completing mechanical works to install a demineralised water unit and waste heat boilers at 3GP

COVID-19

Because of the COVID-19 spread on the Tengiz territory and recurring outbreaks between June 2020 and August 2021, around 35,000 employees working at the field and the FGP–WPMP construction sites had to be repeatedly put on leave and brought back. Starting September 2021, the coronavirus situation began stabilising, and currently approximately 32,000 employees are working on FGP–WPMP construction.

By now, over 100,000 people have been vaccinated, out of whom 4,300 are Tengizchevroil employees, and the rest are contractors. Employee revaccination is now underway, with more than 1,800 people having already received booster shots.

As at the end of 2021, 49,000 people were working at the Tengiz field.

Additionally, a 200-bed modular hospital in Kulsary was commissioned.

Kashagan

The huge Kashagan field is the largest discovery in recent four decades. Kashagan is one of the most complex projects in the industry globally.

The Production Sharing Agreement in respect of the North Caspian Sea (NCSPSA) was signed by the Republic of Kazakhstan and an international consortium in November 1997. North Caspian Operating Company N.V. is the project operator, acting on behalf of the project contractors.

The North Caspian project is the first major offshore oil and gas project in Kazakhstan. It includes five fields: Kashagan, Kalamkas-Sea, Kairan, Aktoty and Kashagan South-West.

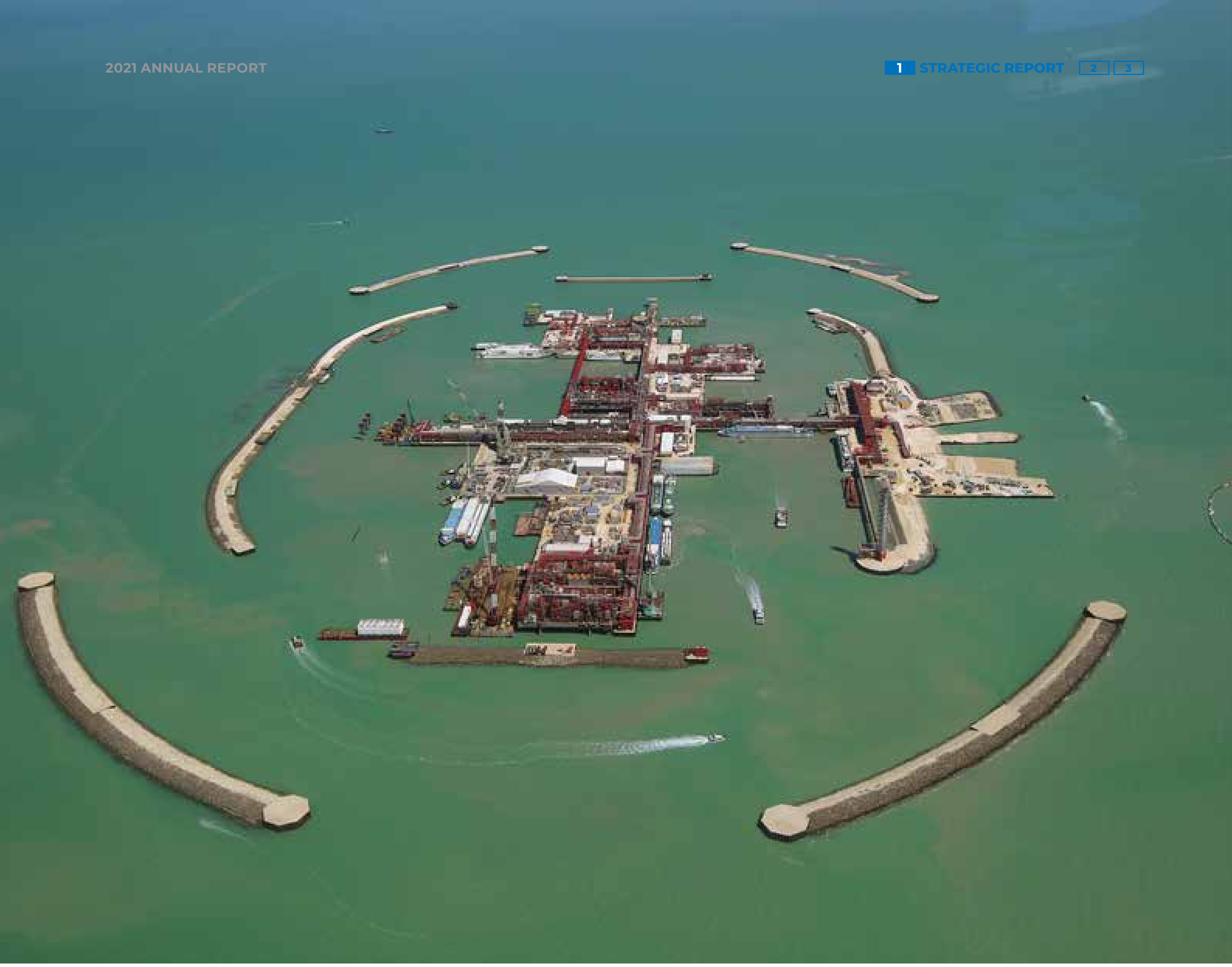
The Kashagan field lies in an offshore location 75 km from Atyrau at water depths of 3 to 4 m. The field reservoir lies at a depth of over 4 km and is characterised by high pressures (over 700 bar) and high hydrogen sulphide (H_2S) concentration. At the same time, sour gas reinjection at high pressure improves oil recovery.

Kashagan is one of the most challenging industry projects globally due to harsh environmental conditions at sea and significant design, logistics and safety challenges. Located in the subarctic climate, the North Caspian Sea is covered with ice for about five months a year, requiring innovative technical solutions. KMG, together with international partners, is successfully implementing the project, having achieved sustainable production rates with further growth potential.

The Kashagan field infrastructure comprises onshore and offshore facilities. Onshore facilities include the Bolashak Onshore Processing Facility (an integrated oil and gas treatment plant) while the offshore facilities comprise a range of manmade structures including an operations and process complex on Island D, Island A, and early production islands EPC-2, EPC-3 and EPC-4. A total of 40 wells were drilled on the Kashagan field, 6 of which are injection wells and 34 are production wells.

Currently, KMG (through Cooperative KazMunayGaz U.A.[1]) jointly with JSC Samruk-Kazyna on a parity basis (50%/50%) owns KMG Kashagan B.V. which, in turn, has a 16.88% interest in the North Caspian project. Thus, KMG indirectly owns 8.44% of the project. KMG also has an option to acquire another 50% in KMG Kashagan B.V. between 2020 and 2022.

[1] A wholly-owned subsidiary of KMG, with the direct ownership of 99.7440256% and indirect ownership via KMG Kumkol LLP of 0.2559744%.



Highlights

Oil and condensate production in 2021 (total)	16,2 mln tonnes (353 kbopd)[2]
Oil and condensate production net to KMG (8.44%)	1,344 ths tonnes (29 kbopd)
2P oil and condensate reserves life[3]	Over 120 years
Gas production (total)	9.9 bln m^3
Interests	North Caspian Operating Company N.V. (16.88%), Eni (16.81%), ExxonMobil (16.81%), Shell (16.81%), TOTAL SA (16.81%), CNPC (8.33%), and INPEX North Caspian Sea (7.56%)
Operator	North Caspian Operating Company N.V. (NCOC)

[2] 1 tonne = 7.9272 bbl.

[3] Reflects the current relatively low oil production level, which has an upside potential.

NCOC's operational highlights

Year	Oil production, ths tonnes	Natural and associated gas production, mln m^3	Sulphur production, ths tonnes	Gas injection, mln m^3
2019	14,127	8,453	1,323	3,148
2020	15,141	9,152	1,228	3,807
2021	16,236	9,878	1,372	4,315

In 2021, oil and gas production from the North Caspian project stood at 16.2 mln tonnes and 9.9 bln m^3, respectively. Kashagan production grew by 7.2% year-on-year to 1,094 ths tonnes of oil and 726 mln m^3 of gas. The significant boost in production in 2021 was driven by an increase in Kazakhstan's quota from August under the OPEC+ Agreement. In Q4 2021, successful tests were carried out on the capacity of the raw gas injection compressors (SGI), which increased the gas injection rate to 15 mln m^3 per day and increased the average daily output to ~ 410 kbopd.

Under the terms of the Production Sharing Agreement (PSA), all oil produced at the Kashagan field is exported, including KMG's share of the oil. The produced oil is mostly exported to Europe, East Asia and India via Novorossiysk, where the oil is delivered by the CPC pipeline.

Outlook for Kashagan

Once sustainable production rates are achieved, two projects are under consideration in phase 1 to ramp up to plateau production with the potential to grow oil and condensate production to 450 kbopd (57 ths tonnes per day) in the medium term.

- Bundle 1.
- Project to supply raw gas to a third party. (Gas processing plant (GPP) with a capacity of 1 bln m^3 per year).

Two separate projects, A and B, are considered for phase 2 to increase oil and condensate production to 700 kbopd (88 ths tonnes per day) over the next 10 years.

- Phase 2A.
- Phase 2B.

Bundle 1

The project will enable oil production increase by 15–20 kbopd (1.9–2.5 ths tonnes per day) by upgrading existing injection compressors and expanding their capacity. Bundle 1 was split into two phases: raw gas injection compressor upgrade (to be completed in 2022) and an ultra-high pressure pipeline with well conversion (2026). The cost of the project is around USD 207 mln. It is expected to be completed in the second half of 2022.

Project to supply raw gas to a third party (Gas Processing Plant (GPP) with a capacity of 1 bln m^3 per year)

The project will provide for increasing oil production by 17–20 kbopd (2.1–2.5 ths tonnes per day) by delivering additional volumes of associated raw gas to KazTransGas' planned new gas processing plant (GPP) with raw gas processing capacity of 1 bln m^3 per year. The project is scheduled for completion in 2024.

Phase 2A

The project seeks to increase oil production to 500,000 kbopd (63 ths tonnes per day at existing facilities, through additional supplies of ~ 2 bln m^3 per year of raw gas to JSC National Company QazaqGaz. The project is now at the FEED stage. An FID is expected in 2023, with the project start-up in 2026.

Phase 2B

The project aims to increase oil production to 700 kbopd (88 ths tonnes per day). An option to build a multi-phase pipeline and a new onshore plant and to supply 6 bln m^3 per year of raw gas to Tengizchevroil or KazTransGas was selected last year Currently, this option undergoes technical and economic review and optimisation as part of a pre-FEED study. An FID is expected in 2024, with the project start-up in 2030.

COVID-19

As part of its COVID-19 response, the operator of the North-Caspian project has been implementing an effective COVID-19 prevention and control programme in order to protect operational staff while taking steps to minimise impact on operations and curb further spread of the virus. For today, 2,838 people have been vaccinated.

Karachaganak

One of the world's largest gas and condensate fields

The Final Production Sharing Agreement (FPSA) in respect of the Karachaganak oil and condensate project was signed by the Republic of Kazakhstan and an international consortium on 18 November 1997. Royal Dutch Shell and Eni are the joint operators of the Karachaganak project (development via Karachaganak Petroleum Operating B.V.).

Highlights

Production of liquid hydrocarbons (stab.[1]) (total)	10.3 mln tonnes (250 kbopd)[2]
Production of liquid hydrocarbon (stab.) net to KMG (10%)	1,034 ths tonnes (25 kbopd)
Outlook	The implementation of investment projects to maintain the achieved liquid hydrocarbon production plateau levels
2P oil and condensate reserves life	Over 20 years
Gas production (total)	18.9 bln m^3
Interests	KMG (10%), Eni (29.25%), Shell (29.25%), Chevron (18.00%) and LUKOIL (13.5%)
Operator	Royal Dutch Shell and Eni are the joint operators of the Karachaganak field (Karachaganak Petroleum Operating B.V.)

[1] A conversion factor of 0.9 is applied to total oil and condensate production to estimate stable liquid hydrocarbons.

[2] 1 tonne = 7.86 bbl.

Karachaganak oil and condensate field is one of the largest oil and condensate fields in the world, located in the West Kazakhstan Region and covering an area of over 280 sq km. The field was discovered in 1979, with pilot development started in 1984.

The Karachaganak project has three core process facilities, comprising a single system of interrelated and interdependent process units within the Karachaganak field's production process:

- KPC – the Karachaganak Processing Complex, located in the northwestern part of the field and processing liquid hydrocarbons coming from wells as well as feedstock transported from Unit 2;
- Unit 2 – a gas treatment unit located in the southeastern part of the field, which separates and reinjects raw gas at high pressure and feeds liquid hydrocarbons to the KPC for stabilisation before shipment for export;
- Unit 3 – a gas treatment unit located in the northeastern part of the field, which separates and partially stabilises liquid hydrocarbons and gas before shipment for export.

In 2021, the field's operating well stock was 158 wells and 19 injection wells.

Liquid hydrocarbon production from Karachaganak decreased by 5.5% year-on-year to 10,338 ths tonnes in 2021, including KMG's share at 1,034 ths tonnes. Gas production was down 6.1% year-on-year at 18,980 mln m^3 in total, with KMG's share at 1,898 mln m^3. The decline was mainly caused by a reduction in raw gas intake by the Orenburg GPP, which is supplied under a long-term gas purchase and sale contract and by long unscheduled maintenance.

Karachaganak Petroleum Operating B.V.'s operational highlights

Year	Gas production, mln m^3	Liquid hydrocarbon production, ths tonnes	Gas injection, mln m^3
2019	18,615	10,147	8,711
2020	20,214	10,941	10,362
2021	18,980	10,338	9,998

Outlook for Karachaganak

The Karachaganak oil and condensate field is in Phase 2 commercial development (phase 2M), which includes a number of major capex projects (Production Plateau Extension Projects and the Karachaganak Expansion Project) aimed at increasing raw gas treatment and reinjection capacity to extend the duration of the liquid hydrocarbon production plateau at the achieved rates.

Production Plateau Extension Projects (phase 2M):

- Installation of the additional 5th Trunk Line (5TL) – the project will increase the annual volume of gas injection to 10 bln m^3 in order to maintain reservoir pressure and add 2.6 mln tonnes of liquid hydrocarbons in incremental production over the remaining life of the FPSA. It was commissioned in December 2019.
- KPC Gas Debottlenecking (KGDBN) – the project envisages commissioning of new glycol gas-dehydration and low-temperature gas separation units with a total capacity of 4.0 bln m^3 per year to increase the volume of gas treatment for reinjection and/or export to the Orenburg Gas Processing Plant (OGPP), as well as add 9.1 mln tonnes of liquid hydrocarbons in incremental production over the remaining life of the FPSA. It was put into operation in April 2021.
- Installation of Unit 2 4th Injection Compressor (4ICP) – the project will install a network of process pipelines to maintain reservoir pressure and the liquid hydrocarbon production plateau by increasing annual gas injection volumes from 10 bln m^3 to 13 bln m^3, as well as add 6.8 mln tonnes of liquid hydrocarbons in incremental production over the remaining life of the FPSA. Commissioning is scheduled for March 2022.
- Installation of the additional 6th Trunk Line (6TL) – the project will optimise the injection process by shifting gas to new parts of the field while adding 2.2 mln tonnes of liquid hydrocarbons in incremental production over the remaining life of the FPSA. Commissioning is scheduled for March 2024.

Combined, the Production Plateau Extension Projects will maximise the benefits through:

- increased gas treatment capacity;
- incremental liquid hydrocarbon production;
- upgrades to existing liquid hydrocarbon treatment units;
- reduced rates of reservoir pressure declines.

Karachaganak expansion Project (KEP)

A major expansion of production units is an option to further extend production plateau post phase 2M. This expansion is to be implemented in phases in 2025–2026. The KEP project which will enable a further boost in gas treatment and reinjection capacities through the phased commissioning of the 5th and 6th injection compressors to sustain oil production at 10 mln to 11 mln tonnes per year. The project cost is estimated at USD 1.8 bln. In December 2020, a final investment decision was taken for the 5th Injection Compressor Project (5ICP), and a FID for the 6th Injection Compressor Project (6ICP) is expected in Q3 2022.

Digital projects to transform operations

As part of the Digital Kazakhstan innovative development state programme, Karachaganak Petroleum Operating B.V. has developed a roadmap for a digital transformation and technology innovation. The current work streams are focused on the areas of production optimisation, well surveillance, smart plant and digital transformations for project delivery, minimisation of paper-intensive processes and maximisation of the automated workflows, warehouse management, improvement of the monitoring and intervention activities.

Digitising key field parameters will enable Karachaganak Petroleum Operating B.V. to make timely decisions maximising productivity through automated integrated data analysis tools. With progress at 65%, the project's expected completion year is 2022.

COVID-19

COVID-19 response at the Karachaganak field included the following crisis response measures implemented early on:

- suspension of drilling until September 2021;
- curtailing well operations not using drilling rigs, postponing non-essential well operations from 2020 to 2021;
- partially postponing preventive maintenance activities from 2020 to 2021;
- shifting employees to work from home;
- increased shifts for Karachaganak Petroleum Operating B.V. employees and contractor personnel;
- regular PCR tests for Karachaganak Petroleum Operating B.V. employees and contractor personnel;
- frequent cleaning and sanitation protocols, etc.

By the beginning of 2022, the number of vaccinated employees at Karachaganak Petroleum Operating B.V. was around 3,500 persons, or 92%.

Oil production at operating assets

As a legacy of more than a hundred years in the oil and gas industry, KMG's producing asset portfolio consists mostly of mature fields. In this regard, KMG's key priority is to improve production efficiency. The Company is committed to energy saving across operations while also maintaining a strong focus on continuous production process optimisations and improvements and driving higher oil recovery rates.

Today about 85% of total oil production at the Company's operating assets comes from seven key fields: Uzen and Karamandybas (JSC OzenMunaiGas), Kalamkas and Zhetybai (JSC MangistauMunaiGaz), S. Nurzhanov and East Moldabek (JSC Embamunaigas) and Karazhanbas (JSC Karazhanbasmunai).

In 2021, construction and installation works continued on the stage 2 facilities of Phase 1, namely "Construction of a 29-km gas pipeline from BPS-GTU Kozhasai" and "Extension of BPS" – construction of the site and installation of a gas dehydration unit (GDU) on the East Urikhtau field. The Urikhtau field is to be put into commercial operation in mid-2023, with expected production of up to 1.5 bln m^3 of gas and 500 ths tonnes of oil per year.

In 2021, KMG's share in the oil production of the operating assets decreased by 152 ths tonnes to 13,961 ths tonnes (or 277 kbopd). This reflects a natural decline in production from mature fields and the implementation of arrangements reached under the OPEC+ agreement.

In 2021, the total well stock in operation was 15,081 wells, of which 11,206 wells were classified as the current declining well stock. Most of oil and condensate production comes from the current declining well stock.

Number of wells at KMG-operated assets

Indicator	2019	2020	2021
New wells	581	518	475
Current declining well stock, including idle wells	12,235 462	11,961 616	11,206 781
Injection wells	3,748	3,338	3,400
Total for KMG-operated assets	**16,564**	**15,817**	**15,081**

Lifting costs

Unit	KZT per tonne	USD per bbl
JSC OzenMunaiGas	38,508	12.5
JSC Embamunaigas	31,694	10.34
JSC Mangistaumunaigaz	23,696	7.69
JV Kazgermunai LLP	11,869	3.62
Kazakhturkmunay LLP	19,212	6.26
Kazakhoil Aktobe LLP	13,986	4.26
JSC Karazhanbasmunai	39,651	13.3

Netbacks

	Exports	Domestic market
Unit	**USD per bbl**	**USD per bbl**
JSC OzenMunaiGas	36.3	16.95
JSC Embamunaigas	37.65	16.87
JSC Mangistaumunaigaz	32.56	16.29
JV Kazgermunai LLP	38.55	19.07
Kazakhturkmunay LLP	39.25	8.1
Kazakhoil Aktobe LLP	38.9	18
JSC Karazhanbasmunai	39.22	12.91

Gas production

Natural and associated gas production decreased by 0.7% to 8,135 mln m^3 in 2021. Operating assets produced 2,466 mln m^3 (30% of the total), and 5,669 mln m^3 (70%) came from megaprojects, with the Tengiz and Karachaganak megaprojects accounting for the bulk of production.

Gas production values are the actual volume of gas produced, including gas reinjected for own needs. Gas reinjection is used to maintain reservoir pressure, which is essential for sustaining high oil production rates.

Commercial gas production in 2021 was 4,625 mln m^3, of which 1,760 mln m^3 were produced from operating assets and 2,865 mln m^3 from megaprojects. Year-on-year, commercial gas production decreased by 173 mln m^3, or 3.6% cumulatively.

Along with processing own feedstock, the KazGPZ plant produces commercial gas using feedstocks supplied by KMG's other operating assets that do not produce commercial gas themselves.

Natural and associated gas production

Indicator	2019	2020	2021
Natural and associated gas production by asset (net to KMG), mln m^3	**8,455**	**8,191**	**8,135**
Operating assets	**2,636**	**2,463**	**2,466**
JSC OzenMunaiGas	709	726	665
JSC Embamunaigas	260	217	202
JSC Mangistaumunaigaz	394	334	376
JV Kazgermunai LLP	224	188	185
JSC Karazhanbasmunai	27	27	31
JSC PetroKazakhstan Inc.	181	142	125
Kazakhoil Aktobe LLP	348	361	412
Kazakhturkmunay LLP	143	140	167
Amangeldy Gas LLP	350	326	278
Urikhtau Operating LLP	0	2	24
Megaprojects	**5,819**	**5,729**	**5,617**
Tengizchevroil LLP	3,258	2,950	2,953
KMG Kashagan B.V.	700	758	818
KMG Karachaganak LLP	1,861	2,021	1,898

Commercial gas production from KMG-operated assets, mln m^3

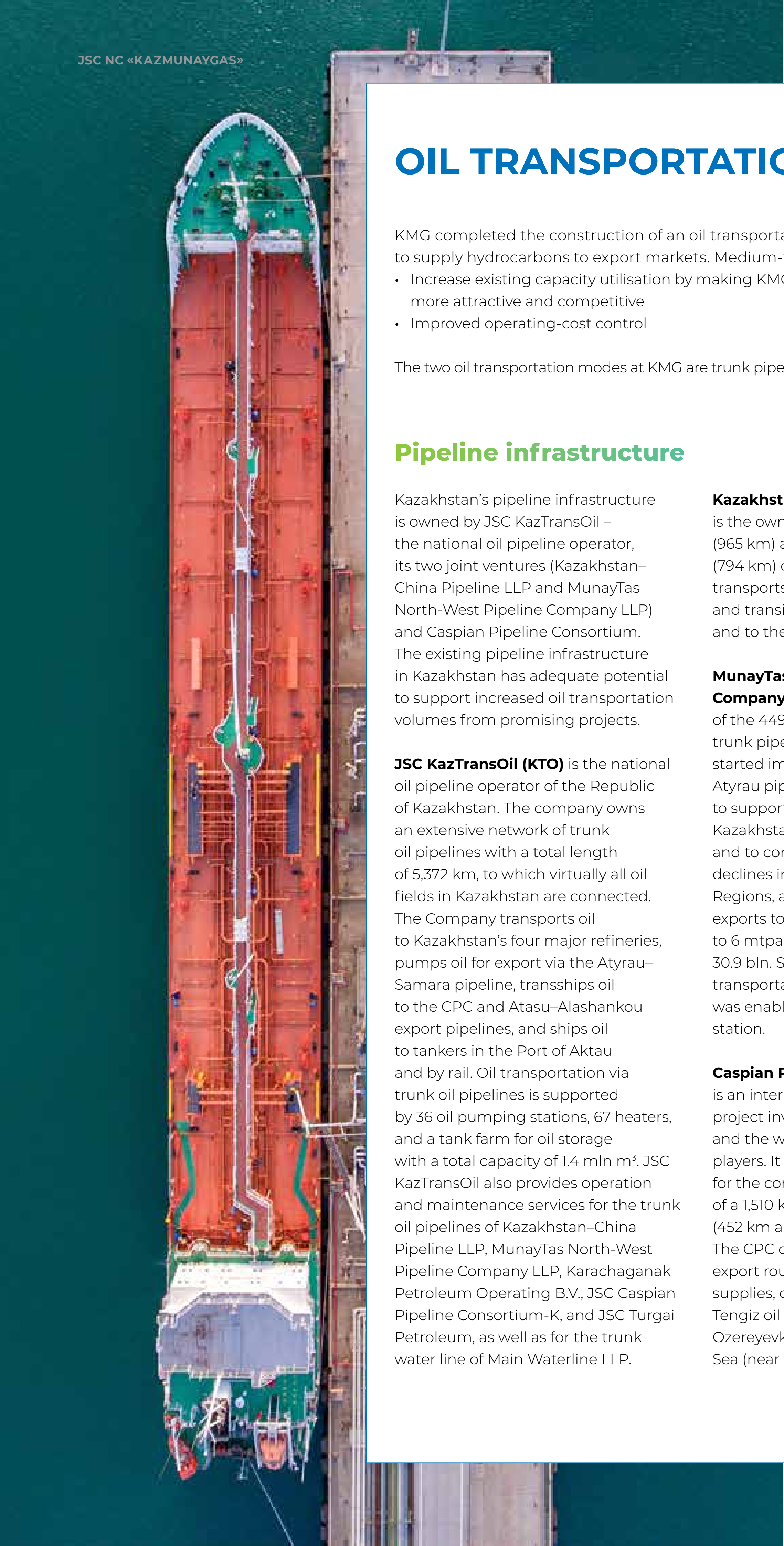
Indicator	2019	2020	2021
JSC OzenMunaiGas + KazGPZ[1]	680	751	636
JSC Mangistaumunaigaz (PD Zhetybaimunaigaz)[1]	116	161	172
JV Kazgermunai LLP	184	150	303
Amangeldy Gas LLP	346	326	
Kazakhoil Aktobe LLP	157	185	383
JSC Embamunaigas	135	152	145
Kazakhturkmunay LLP	163	103	121
JSC PetroKazakhstan Inc.	43	49.5	0
JSC Karazhanbasmunai	0	0	0
Total for operating assets	**1,823**	**1,877**	**1,760**

Commercial gas production from megaprojects (net to KMG), mln m^3

Indicator	2019	2020	2021
Tengiz	1,894	1,735	1,743
Karachaganak[2]	911	899	818
Kashagan	293	287	304
Total for megaprojects	**3,099**	**2,921**	**2,865**

[1] Raw gas from JSC OzenMunaiGas and JSC MangistauMunaiGaz's PD Zhetybaimunaigaz is supplied to the KazGPZ plant.

[2] Raw gas supplies to the Orenburg Gas Processing Plant.



OIL TRANSPORTATION

KMG completed the construction of an oil transportation infrastructure to supply hydrocarbons to export markets. Medium-term priorities:

- Increase existing capacity utilisation by making KMG's oil transportation systems more attractive and competitive
- Improved operating-cost control

The two oil transportation modes at KMG are trunk pipelines and the marine fleet.

Pipeline infrastructure

Kazakhstan's pipeline infrastructure is owned by JSC KazTransOil – the national oil pipeline operator, its two joint ventures (Kazakhstan–China Pipeline LLP and MunayTas North-West Pipeline Company LLP) and Caspian Pipeline Consortium. The existing pipeline infrastructure in Kazakhstan has adequate potential to support increased oil transportation volumes from promising projects.

JSC KazTransOil (KTO) is the national oil pipeline operator of the Republic of Kazakhstan. The company owns an extensive network of trunk oil pipelines with a total length of 5,372 km, to which virtually all oil fields in Kazakhstan are connected. The Company transports oil to Kazakhstan's four major refineries, pumps oil for export via the Atyrau–Samara pipeline, transships oil to the CPC and Atasu–Alashankou export pipelines, and ships oil to tankers in the Port of Aktau and by rail. Oil transportation via trunk oil pipelines is supported by 36 oil pumping stations, 67 heaters, and a tank farm for oil storage with a total capacity of 1.4 mln m^3. JSC KazTransOil also provides operation and maintenance services for the trunk oil pipelines of Kazakhstan–China Pipeline LLP, MunayTas North-West Pipeline Company LLP, Karachaganak Petroleum Operating B.V., JSC Caspian Pipeline Consortium-K, and JSC Turgai Petroleum, as well as for the trunk water line of Main Waterline LLP.

Kazakhstan–China Pipeline LLP is the owner of the Atasu–Alashankou (965 km) and Kenkiyak–Kumkol (794 km) oil pipelines. The company transports Kazakhstan's oil and transit Russian oil to China and to the domestic market.

MunayTas North-West Pipeline Company LLP (MT) is the owner of the 449 km Kenkiyak–Atyrau oil trunk pipeline. In 2018, the company started implementing the Kenkiyak–Atyrau pipeline reverse project to support supplies of West Kazakhstan's oil to domestic refineries and to compensate production declines in the Aktobe and Kyzylorda Regions, as well as to support exports to China totalling up to 6 mtpa. The project cost is KZT 30.9 bln. Starting 1 July 2021, reverse transportation of up to 6 mtpa of oil was enabled at the Aman oil pumping station.

Caspian Pipeline Consortium (CPC) is an international oil transportation project involving Russia, Kazakhstan and the world's leading industry players. It was established for the construction and operation of a 1,510 km trunk pipeline (452 km are within Kazakhstan). The CPC oil pipeline is a priority export route for Kazakhstan's oil supplies, connecting Kazakhstan's Tengiz oil field with the Yuzhnaya Ozereyevka oil terminal on the Black Sea (near the Port of Novorossiysk).

Indicator	Trunk pipeline transportation				Marine fleet transportation
Management company	**KazTransOil (KTO)**	**Kazakhstan–China Pipeline (KCP)**	**MunayTas (MT)**	**Caspian Pipeline Consortium (CPC)**	**Kazmortransflot (KMTF)**
Interest	KMG: 90 %[1]	KTO: 50 %	KTO: 51 %	KMG: 20,75 %	KMG: 100 %
Key destinations	Exports to Europe and China, domestic market	Exports to China, domestic market	Exports to China, domestic market	Exports to Europe	Exports to Europe
Key routes	Kazakhstan's refineries Uzen–Atyrau–Samara Port of Aktau Oil transshipment to the CPC and Atasu–Alashankou pipelines	Atasu–Alashankou Kenkiyak–Kumkol	Kenkiyak–Atyrau	Tengiz–Novorossiysk	Black Sea Mediterranean Sea Caspian Sea
Total length, km	5,372	1,759	449	1,510	n/a
Capacity, mtpa	17.5[2] 5.2[3]	20	6	67	n/a

KMG's oil pipeline network

[1] 10% of shares are owned by minority shareholders who acquired them under the People's IPO programme.
[2] Capacity of the Atyrau–Samara section.
[3] Capacity of the Port of Aktau (large-capacity vessel berths, oil loading).

Oil transportation via the CPC pipeline is supported by 15 oil pumping stations, an oil storage tank farm with a total capacity of 1.3 mln m^3 and three single-point moorings.

In view of the anticipated increases in oil production from Tengiz and Kashagan, in 2019 CPC shareholders resolved to launch a debottlenecking project for the pipeline system, which is expected to increase the volume of Kazakhstan's oil transportation to 72.5 mtpa. The project timeframe is 2019–2023, and its cost is USD 600 mln. The project will be financed using CPC's own funds.

Trunk pipeline oil transportation

In 2021, KMG's share in the consolidated volume of trunk pipeline oil transportation was marginally up by 0.8% to 64,710 ths tonnes. The increase was due to higher domestic transportation to Kazakh refineries in order to ensure necessary refining volumes in the domestic market. At the same time, oil exports were down as subsoil users agreed to limit production as part of the OPEC+ agreement and amid a natural decline in production at mature fields.

Volume of oil transportation, ths tonnes[1]

Company	2019	2020	2021
KazTransOil (100%)	**44,463**	**42,298**	**41,224**
export	17,567	16,699	14,296
transit	9,979	9,989	9,989
domestic market	16,917	15,610	16,939
Kazakhstan–China Pipeline (100%)	**16,200**	**15,883**	**17,412**
export	859	571	967
transit	9,979	9,979	9,979
domestic market	5,362	5,333	6,465
MunayTas (100%)	**3,232**	**3,321**	**4,273**
export	1,998	1,595	1,572
domestic market	1,234	1,726	2,701
Caspian Pipeline Consortium (100%), export	**63,256**	**59,027**	**60,728**

Structure of oil transportation by destination in 2021, %

Company	Export	Transit	Domestic market
KazTransOil	35	24	41
Kazakhstan–China Pipeline	6	57	37
MunayTas	37	n/a	63
Caspian Pipeline Consortium	100	n/a	n/a

Oil transportation turnover, mt*km

Company	2019	2020	2021
KazTransOil (100%)	37,658	35,899	35,162
Kazakhstan–China Pipeline (100%)	14,590	14,368	15,592
MunayTas (100%)	1,232	1,322	1,725
Caspian Pipeline Consortium (100%)	82,997	77,207	79,446

Oil transportation turnover (net to KMG), mt*km

Company	2019	2020	2021
KazTransOil (100%)	37,658	35,899	35,162
Kazakhstan–China Pipeline (50%)	7,296	7,185	7,796
MunayTas (51%)	628	674	879
Caspian Pipeline Consortium (20.75%)	17,222	16,020	16,485

[1] Consolidated volume of oil transported includes the transportation volume of each individual pipeline company, including the operating share of KMG (excluding KTO). Part of the oil volumes can be transported by two or three pipeline companies, and these volumes are accordingly counted more than once in the consolidated volume of oil transportation.

Volume of oil transportation (net to KMG), ths tonnes[2]

Company	2019	2020	2021
KazTransOil (100%)[3]	44,463	42,298	41,224
Kazakhstan–China Pipeline (50%)	8,100	7,942	8,706
MunayTas (51%)	1,648	1,694	2,179
Caspian Pipeline Consortium (20.75%)	13,126	12,248	12,601
Total	**67,337**	**64,181**	**64,710**

Tariffs for oil transportation to the domestic market, KZT per tonne per 1,000 km

Company	2019	2020	2021
KazTransOil	4,772 (4,717 from 01.09.2019)	4,110	4,356 (4,328 from 01.12.2021)
Kazakhstan–China Pipeline	7,158	6,456 (7,158 from 01.02.2020)	4,323.7
MunayTas	5,724 (5,912 from 01.07.2019)	5,457.3 (5,912 from 25.12.2020)	5,912

Tariffs for oil transportation for export

Company	2019	2020	2021
KazTransOil, KZT per tonne per 1,000 km	6,399	6,399 (7,359 from 01.03.2020)	7,359
Kazakhstan–China Pipeline, KZT per tonne per 1,000 km	6,799	6,799	6,799
MunayTas, KZT per tonne per 1,000 km	5,912	5,912	5,912
Caspian Pipeline Consortium, USD per tonne	38	38	38

Tariffs for transit to China, USD per tonne

Company	2019	2020	2021
KazTransOil	4.23	4.23	4.23
Kazakhstan–China Pipeline	10.77	10.77	10.77

Tariffs for trunk pipeline oil transportation

The tariffs for crude oil transportation to Kazakhstan's domestic market are regulated by the government.

According to Law of the Republic of Kazakhstan No. 204-VI on Natural Monopolies dated 27 December 2018, oil transportation services to support transit via the territory of the Republic of Kazakhstan and exports outside the Republic of Kazakhstan are beyond the scope of natural monopolies..

Oil transportation by sea

Transportation assets

NMSC Kazmortransflot LLP (KMTF) is the National Sea Carrier. Its assets include:

- merchant fleet: owned oil tankers: Astana, Almaty and Aktau, each with a deadweight of 12,000 tonnes; and Aframax oil tankers – Alatau and Altai, each with a deadweight of 115,000 tonnes;
- marine support fleet: 8 barge platforms of KMG series with a capacity of 3,600 tonnes each;
- fleet to support Tengizchevroil's Future Growth Project: 3 Caspian-class barges (MCV) – Barys, Berkut and Sunkar with a capacity of 5,200 tonnes each, and 3 tugboats – Talas, Emba and Irgiz with a bollard pull of 40 tonnes-force each.

The main current routes for oil transportation by sea:

- Routes in the Caspian Sea waters
- Routes in the Black Sea and Mediterranean Sea waters.

[2] Consolidated volume of oil transported includes the transportation volume of each individual pipeline company, including the operating share of KMG (excluding KTO). Part of the oil volumes can be transported by two or three pipeline companies, and these volumes are accordingly counted more than once in the consolidated volume of oil transportation.

[3] Since KTO is fully operated by KMG, transportation volumes are reported as 100%.

Performance highlights

In 2021, the total volume of transportation by sea increased moderately by 865 ths tonnes year-on-year to 9,855 ths tonnes. The improvement was due to higher transportation volumes in the Mediterranean Sea as a result of the recovery in the market for oil transportation by sea.

In March 2021, the Company completed the conversion of an MCV ship Barys into a container ship. Container cargoes will be shipped along the Aktau–Baku–Aktau feeder line. Also, KMTF signed an agreement with KTZ Express Shipping LLP that will see KMTF obtain the right of ownership to bulk carriers.

In May, KMTF became the owner of two bulk carriers: Beket-Ata and Turkestan.

Transportation volumes, ths tonnes

Sea	2019	2020	2021
Black Sea and Mediterranean Sea	10,186	8,361	9,318
Caspian Sea	543	629	537
Total	**10,729**	**8,990**	**9,855**

Oil transportation turnover, mt*km

Sea	2019	2020	2021
Black Sea and Mediterranean Sea	9,676	7,942	8,852
Caspian Sea	165	197	167
Total	**9,841**	**8,139**	**9,019**

In Q3 2021, all obligations were honoured to Al Hilal Islamic Bank JSC as part of an ijara Mawsufah Fi Al Thima agreement. In addition, a general agreement on container shipping along the Baku–Turkmenbashi–Baku route was signed between KMTF and ADY Container LLC.

GAS TRANSPORTATION AND MARKETING

9 November saw the ultimate transfer of 100% of shares in JSC KazTransGas to JSC Samruk-Kazyna Sovereign Wealth Fund (the "Fund"). Prior to this transfer, KazMunayGas was the beneficiary owner of KazTransGas. KTG shares were transferred to the Fund to carry out the commission of the Council for the Fund Governance (chaired by Nursultan Nazarbayev, the First President of Kazakhstan) dated 3 June 2020 and the commission of President Kassym-Jomart Tokayev to establish a national gas exploration, production, and transportation operator given at an enlarged meeting of the Government on 26 January 2021. KTG had been part of KMG since the national company's establishment in 2002. During this period, KMG invested around KZT 143 bln in KTG in cash and property. This resulted in a more than 20x increase in KTG's assets from KZT 125 bln to KZT 2.5 tln, while equity and annual revenue grew from KZT 61 bln to KZT 1.6 tln and from KZT 85 bln to KZT 900 bln, respectively. Since the establishment of KTG, more than 10,000 km of trunk gas pipelines have been laid and launched in Kazakhstan. Currently, KTG operates over 20,600 km of trunk gas pipelines and over 59,000 km of gas distribution networks.

It should be noted that the 2021 gas transportation data represent the period from 1 January to 8 November 2021.

Gas pipeline infrastructure

JSC KazTransGas (KTG) (JSC NC QazaqGaz starting 2022) is Kazakhstan's national gas and gas supply operator. KTG operates the centralised infrastructure for commercial gas transportation via trunk pipelines and gas distribution networks, supports international transit and marketing of gas on the domestic and foreign markets, as well as designs, finances, builds and operates gas pipelines and gas storage facilities.

KTG operates the largest trunk gas pipeline network in Kazakhstan with a total length of over 20,600 km, including 2,728 km of pipeline branches, as well as gas distribution networks with a total length of over 59,000 km. Gas transportation is supported by 42 compressor stations and 238 compressor units.

Intergas Central Asia (ICA) is the national gas pipeline operator and a wholly-owned subsidiary of KTG.

Today, ICA carries out export, internal transportation and transit of natural gas within the territory of Kazakhstan through gas pipelines with a total length of 12,532 km and a 185.5 bln m^3 per year capacity.

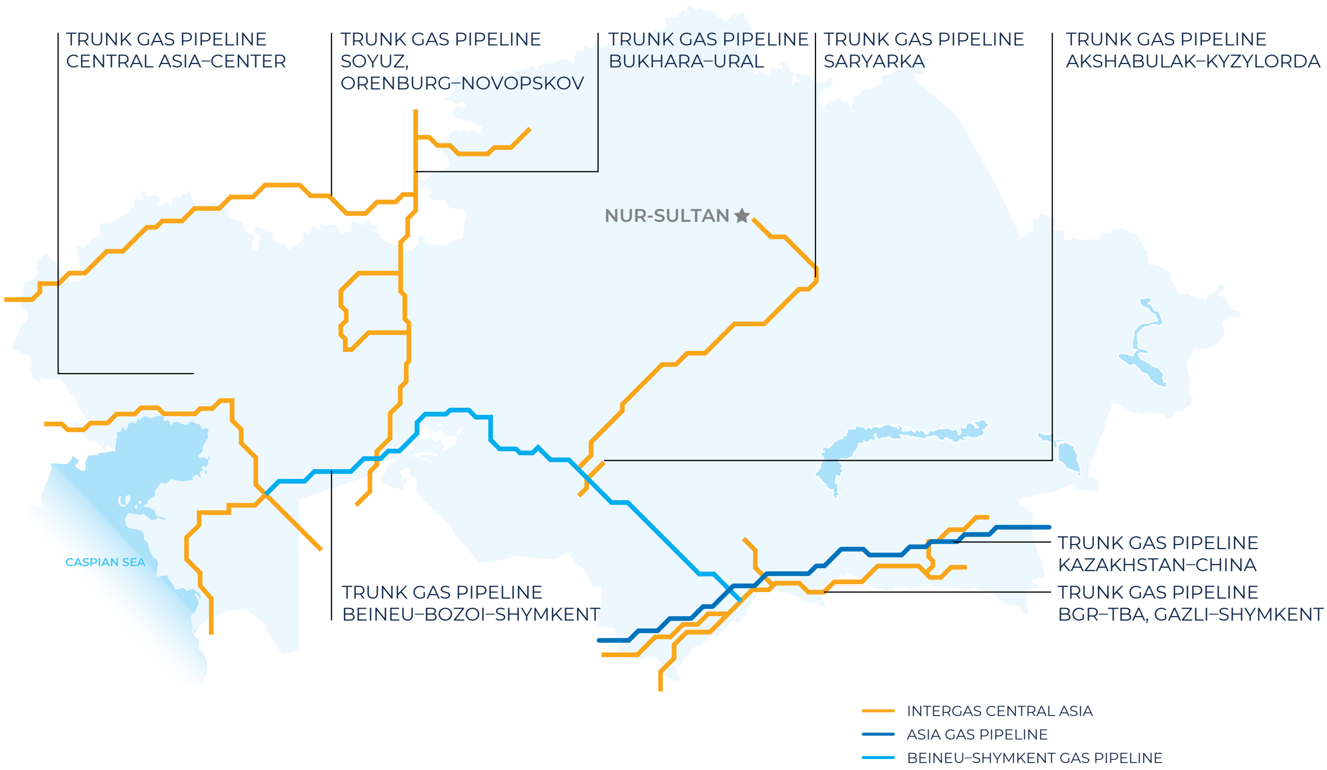
ICA operates three underground gas storages (UGS):
- Bozoyskoye UGS in the Aktobe Region;
- Poltoratskoe UGS in the South Kazakhstan Region;
- Akyrtobinskoye UGS in the Zhambyl Region.

Asia Gas Pipeline LLP (AGP) is a 50/50 joint venture between JSC KazTransGas and Trans-Asia Gas Pipeline Company Ltd. (shareholder – CNODC, a subsidiary of CNPC), launched to finance, build and operate the Kazakhstan–China gas pipeline. The purpose of the project is to facilitate the transit of Turkmen and Uzbek gas to China, exports of Kazakh gas to China, as well as uninterrupted gas supply to southern regions of Kazakhstan.

The pipeline comprises three strings: A and B, with a total length of 2,612 km and throughput capacity of 30 bln m^3 per year, and the 1,304 km String C with a throughput capacity of 25 bln m^3 per year.

Beineu-Shymkent Gas Pipeline LLP is a 50/50 joint venture between JSC KazTransGas and Trans-Asia Gas Pipeline Company Ltd. (shareholder – CNODC, a subsidiary of CNPC). The project is of paramount strategic importance to the Republic of Kazakhstan,

Management company	JSC Intergas Central Asia (ICA)	Asia Gas Pipeline LLP	Beineu–Shymkent Gas Pipeline LLP	JSC KazTransGas Aimak (KTGA)
Interest	KTG: 100 %	KTG: 50 %	KTG: 50 %	KTG: 100 %
Key destinations	Exports, domestic market and transit	Exports and transit to China, domestic market	Exports to China, domestic market	Trunk pipeline gas transportation to the domestic market, transportation via gas distribution systems
Key routes	Kazakhstan, Russia, Uzbekistan and Turkmenistan	Kazakhstan–China	Beineu–Bozoi–Shymkent	n/a
Total length, km	15,260	3,916	1,454	59,182
Capacity, bln m^3 per year	198	55	15	-



as it supplies the natural gas needs of Kazakhstan's southern regions, enables diversification of Kazakhstan's gas exports, ensures energy security of the country, and builds a unified gas transportation system.

The Beineu–Bozoi–Shymkent trunk gas pipeline is the second section of the Kazakhstan–China gas pipeline. The gas pipeline connects the western oil and natural gas fields with the southern regions of the country, as well as with the Bukhara gas-bearing region – Tashkent–Bishkek–Almaty gas pipeline, the Gazli–Shymkent gas pipeline and String C of the Central Asia–China gas pipeline. The actual length of the Beineu–Shymkent gas pipeline is 1,454 km, and its capacity is 15 bln m³ per year.

JSC KazTransGas Aimak (KTGA) is the largest gas distributor in Kazakhstan, operating more than 59,000 km of distribution and 2,728 km of trunk gas pipelines across all ten regions and three cities of national significance connected to the gas grid.

KazTransGas Aimak's key objectives:

- Ensuring commercial gas supplies
- Transportation of gas via distribution networks
- Management of gas transportation assets in the regions.

Company	Trunk gas pipeline/gas pipeline	Length, km	Capacity, bln m³ per year
Intergas Central Asia	Soyuz, Orenburg–Novopskov	805	40.4
	Central Asia–Center	4,149.2	47.2
	Bukhara–Ural	1,567.8	44.6
	BGR–TBA[1], Gazli–Shymkent	1,903.4	24.4
	Akshabulak–Kyzylorda	123	0.42
	Saryarka[2]	1,061.3	2.7[3]
Asia Gas Pipeline	Kazakhstan–China	3,916	55
Beineu–Shymkent Gas Pipeline	Beineu–Bozoi–Shymkent	1,454	15

[1] The Bukhara gas-bearing region – Tashkent–Bishkek–Almaty.

[2] Saryarka trunk gas pipeline was leased to ICA, but is owned by JSC AstanaGaz KMG, which has JSC Samruk-Kazyna and JSC Baiterek Venture Fund as its shareholders (50%/50%).

[3] For the 1st stage of the gas pipeline, the design and actual capacity is 2.2 bln m³ per year.

Trunk pipeline gas transportation

From 1 January to 8 November 2021, the volume of gas transported through KMG's trunk pipelines amounted to 81,851 mln m³. Comparing the total annual volumes in 2020 and 2021, trunk pipeline gas transportation was up 10.2% to 95,422 mln m³, mainly due to higher Central Asian gas transit flows to Russia and China, as well as higher gas consumption in Kazakhstan's market. At the same time, gas export is declining due to redistribution of some gas volumes to the domestic market as well as reduced commercial gas production by large suppliers.

Gas distribution and regional expansion of gas infrastructure

In 2021, two projects were successfully completed:

Gas infrastructure expansion in Almaty, Almaty gas distribution infrastructure upgrade and reconstruction

As a result of the project, 4,100 new customers were provided with gas, 226 km of new pipelines were built, 95.6 km of existing pipelines reconstructed, and 36 gas control units installed.

Construction of the gas distribution infrastructure for the 1st and 2nd start-up complexes of Phase 2 in Nur-Sultan

Gas distribution infrastructure of 100.581 km is built to 3 residential areas: Internatsionalny, Michurino, and Kuygenzhar. Five block-type gas distribution plants and five gas-control units were installed. At year-end 2021, 71 customers and 1 municipal enterprise were connected at Internatsionalny, Michurino, and Kuygenzhar residential areas. It is planned to connect 1,644 customers.

Volume of gas transportation, mln m³

Company	2019	2020	2021
Intergas Central Asia (100%)	**72,961**	**57,753**	**54,874**
export	19,069	12,687	7,606
transit	40,229	30,788	34,940
domestic market	13,663	14,278	12,329
Asia Gas Pipeline (100%)	**45,870**	**39,776**	**41,611**
export	7,090	7,011	4,938
transit	38,280	31,878	35,294
domestic market	500	886	1,379
Beineu–Shymkent Gas Pipeline (100%)	**10,087**	**12,694**	**10,709**
export	7,091	7,011	4,907
domestic market	2,996	5,682	5,802
KazTransGas Aimak (100%), domestic market	**2,554**	**2,603**	**816**

Gas transportation volumes (net to KMG), mln m³

Total trunk pipeline gas transportation	2019	2020	2021
Intergas Central Asia (100%)	72,961	57,753	54,874
Asia Gas Pipeline (50%)	22,935	19,888	20,805
Beineu–Shymkent Gas Pipeline (50%)	5,044	6,347	5,354
KazTransGas Aimak (100%)	2,554	2,603	816
Total	**103,494**	**86,590**	**81,851**

Structure of gas transportation by destination in 2021, %

Company	Export	Transit	Domestic market
Intergas Central Asia	14	64	22
Asia Gas Pipeline	12	85	3
Beineu–Shymkent Gas Pipeline	46	n/a	54
KazTransGas Aimak	n/a	n/a	100

Gas turnover (commodity transportation volumes), mln m³*km

Company	2019	2020	2021
Intergas Central Asia (100%)	22,325	16,302	16,227
Asia Gas Pipeline (100%)	57,470	49,337	51,711
Beineu–Shymkent Gas Pipeline (100%)	14,669	17,831	14,064

Gas turnover (commodity transportation volumes) (net to KMG), mln m³*km

Company	2019	2020	2021
Intergas Central Asia (100 %)	22,325	16,302	16,277
Asia Gas Pipeline (50 %)	28,735	24,668	25,855
Beineu–Shymkent Gas Pipeline (50 %)	7,334	8,915	7,032

Gas marketing

As the national gas and gas supply operator, KazTransGas exercises the government's pre-emptive right to purchase raw and/or commercial gas from subsoil users / suppliers.

In accordance with the law, subsoil users send commercial proposals to the national operator, indicating the volumes, price and delivery point for the proposed supply of raw and/ or commercial gas. The national operator uses its own judgement to decide whether to exercise or waive the government's pre-emptive right.

Currently, the national operator exercises the government's pre-emptive right to acquire gas from the following companies with KMG interest:

- JSC Embamunaigas (100%)
- JV Kazgermunai LLP (50%)
- Kazakhoil Aktobe LLP (50%)
- Kazakhturkmunay LLP (100%)
- KazMunayTeniz LLP (100%).

The gas supplied by the above companies is marketed in the domestic market.

Gas resources, mln m^3

Indicator	2019	2020	2021
Gas purchase volumes	**24,200**	**23,313**	**19,087**
Kazakh subsoil users/suppliers	**16,435**	**19,879**	**17,431**
Companies with KMG participation	9,537	14,113	13,011
Third parties	6,898	5,766	4,330
Gas imports	**7,765**	**3,434**	**1,746**
Russia	5,055	3,434	1,746
Uzbekistan	2,710	0	0

Indicator	2019	2020	2021
Export	**8,806**	**7,852**	**5,188**
Russia	1,000	560	0
Kyrgyzstan	264	281	250
Uzbekistan	452	0	0
China	7,091	7,011	4,938
Domestic market	**14,028**	**14,811**	**12,830**
Total	**22,834**	**22,663**	**18,019**

Companies with a KMG interest that are exempt from the government's pre-emptive right to acquire gas:

- Amangeldy Gas LLP (100%)
- KazGPZ LLP (100%)
- Tengizchevroil LLP (20%)
- Karachaganak Petroleum Operating B.V. (10%)
- North Caspian Operating Company N.V. (8.44%)

The above companies all sell gas domestically and for export.

Commercial gas sales volumes from 1 January until 8 November 2021 totalled 18,019 mln m^3 with an insignificant decline by 0.8% to 22,473 mln m^3 when comparing the full-year volumes of 2021 and 2020. The prevalent share of commercial gas sales, 73.1%, is attributable to the domestic market with consumption increasing by 10.9%. Exports plummeted by 23.0% to 6,044 mln m^3 due to lower gas supplies to Russia and China.

DOWNSTREAM

The Company has completed a number of major modernisation projects across its oil refineries in Kazakhstan and Romania, successfully achieving higher refining depths. The Company's plans for the mid-term include:

- for Kazakhstan refineries: to drive operational excellence through cost optimisation and higher oil product output by reducing losses and fuel consumption for operational needs
- for Romania refineries: to improve performance by increasing the output of higher-margin products while cutting refining costs through streamlining and digitising production processes, optimising the product slate to achieve higher sales margins for refined products, and sustaining dividend payments to the KMG Corporate Centre
- integrated petrochemical projects: under its trusteeship agreements, KMG implements two major investment projects:
  - construction of the first integrated petrochemical complex with a capacity of 500 ths tonnes of polypropylene per year, to be commissioned in 2021
  - construction of a 1.25 mtpa polyethylene plant (currently at the design stage).

Oil and condensate marketing

In 2021, sales of own oil and condensate produced by KMG amounted to 21,661 ths tonnes, including 13,745 ths tonnes of oil exports, and 7,916 ths tonnes of domestic oil supplies. Supplies to KMG refineries in Kazakhstan are fully included in domestic oil supplies: 3,549 ths tonnes to Atyrau Refinery, 3,028 ths tonnes to Pavlodar Refinery, 875 ths tonnes to Shymkent Refinery and 464 ths tonnes to CASPI BITUM. The year-on-year decline in performance was mainly due to lower oil production and consumption as a result of the COVID-19 pandemic and OPEC+ restrictions.

Sales of KMG-produced oil and condensate, ths tonnes

Assets	2019			2020			2021		
	Export	Domestic market	Total	Export	Domestic market	Total	Export	Domestic market	Total
Operating assets[1]	8,472	7,137	15,609	7,524	6,849	14,373	6,126	7,916	**14,042**
including subsidiaries and associates[2]	5,325	3,453	8,778	4,911	3,517	8,428	3,805	4,458	**8,262**
Megaprojects[3]	8,215	1	8,216	7,637	2	7,639	7,619	0	**7,619**
Total	**16,688**	**7,138**	**23,826**	**15,161**	**6,851**	**22,012**	**13,745**	**7,916**	**21,661**

KMG refining assets

Within KMG's asset mix, four refineries in Kazakhstan and two in Romania are responsible for processing liquid hydrocarbons (primarily oil).

Prospective projects and innovations

In 2021, 3D General Layout engineering data management system – a digital twin of Atyrau and Pavlodar Refineries – was implemented to shift to modified 3D-based processes. Under the Digital Transformation Programme, Atyrau and Pavlodar Refineries are also implementing accurate engineering models of process units. Using special software HYSYS is used to develop digital twins of refining processes. Accurate calculations will improve the performance of the units.

Pavlodar Refinery has signed EPC contract on Construction of LPG Treatment Facility with a capacity of 100 ths tonnes per year to be completed in 2023. The refinery also plans to implement by 2024 the project on reconstruction of diesel hydrotreating plant including a dewaxing unit with a capacity of 160 ths tonnes of winter diesel fuel per year. Basic design and feasibility study have been developed, tendering procedures for EPC contractor are on the way.

In 2021, a pilot project of hydrogen-powered car park including

KMG refineries

Indicator	Kazakhstan refineries				Romania refineries	
	Atyrau Refinery	Pavlodar Refinery	Shymkent Refinery	CASPI BITUM	Petromidia Refinery	Vega Refinery
Location	Atyrau	Pavlodar	Shymkent	Aktau	Năvodari	Ploiești
Commissioning date	1945	1978	1985	2013	1979	1905
Design refining capacity, mln tonnes	5.5	6.0	6.0	1.0	6.0[4]	0.5
Hydrocarbon refining volumes in 2021, mln tonnes	5.5	5.4	5.1	0.92	4.6[5]	0.3
Refinery utilisation rate in 2021, %	100	90	85	92	77[6]	60
KMG interest, %	99.53	100	49.72	50	54.63	54.63
Nelson Index	13.9	10.5	8.2	–	10.5	–
Light product yield in 2021, %	63	69	80	–	80	–
Refinery co-owners	–	–	CNPC	CITIC	Romanian Government	Romanian Government

1 A JSC OzenMunaiGas, JSC Embamunaigas, JSC Karazhanbasmunai, JV Kazgermunai LLP, JSC PetroKazakhstan Inc., Kazakhturkmunay LLP, Kazakhoil Aktobe LLP, JSC MangistauMunaiGaz, Amangeldy Gas LLP, Urikhtau Operating LLP.

2 JSC OzenMunaiGas, JSC Embamunaigas, Kazakhturkmunay LLP, Urikhtau Operating LLP.

3 KMG Kashagan B.V., KMG Karachaganak, Tengizchevroil LPP.

4 Design capacity includes refining 5 mln tonnes of crude oil and 1 mln tonnes of other hydrocarbons per year.

5 Total refining volume of 4.86 mln tonnes includes 3.98 mln tonnes of crude oil and 0.88 mln tonnes of other and alternative feedstocks.

6 Petromidia Refinery utilisation rate is 97.5% based on Solomon Associates' methodology.

construction of a hydrogen fuelling station in Atyrau was launched in cooperation with Air Liquide Advanced Technology. It is planned to construct one mobile and one fixed hydrogen fuelling stations by Q4 2022. Mobile Air Liquide AT station installed on a truck with 7.5 tonnes chassis will have 2 filling lines, 35 MPa and 70 MPA, with infrared communications, and it will consist of a transportation module filled at 76.5 MPa. The capacity of the mobile station will be 12.8 kg, the fuelling time – 5–20 minutes depending on the vehicle type. Fixed hydrogen fuelling station will be constructed in two stages. At stage 1, Air Liquide will ensure the required hydrogen purity in terms of carbon dioxide content by connecting to Atyrau Refinery's Hydrogen Production and Purification Plant 2 and installing proprietary final treatment unit. At stage 2, Atyrau Refinery will enter into EPC contract with Air Liquide Russia on construction of a fixed hydrogen fuelling station. Then, Air Liquide will consider the possibility of buyout of the fuelling station.

Tariff policy

Kazakhstan refineries only offer oil refining services using the set tariffs (processing business scheme) and do not purchase crude for refining or sell refined products. Oil suppliers market finished products independently. The refineries focus exclusively on the operations side, streamlining refining activities and reducing operating expenses.

Oil refining tariffs at Kazakhstan refineries factor in actual production-related operating expenses and an investment component (capital expenditures to maintain current production rates, repayment of loans raised for modernisation).

Weighted average tariffs to refine 1 tonne of tolling feedstock and relevant costs, KZT

Refinery	2019	2020	2021
Atyrau Refinery	37,436	41,168	42,434
Pavlodar Refinery	19,805	20,904	23,033
Shymkent Refinery	24,485	30,783	35,191
CASPI BITUM	18,010	18,003	18,472

Hydrocarbon refining volumes (net to KMG), ths tonnes

Refinery	2019	2020	2021
Atyrau Refinery	5,388	5,016	5,473
Pavlodar Refinery	5,290	5,004	5,407
Shymkent Refinery (50%)	2,701	2,397	2,582
CASPI BITUM (50%)	443	433	464
Total	**13,822**	**12,849**	**13,927**

Oil product output (net to KMG), ths tonnes[7]

Oil products	2019	2020	2021
Atyrau Refinery	**4,892 (100%)**	**4,525 (100%)**	**4,867 (100%)**
• Light[8]	2,998 (61%)	2,737 (60%)	3,169 (65%)
• Dark[9]	1,590 (33%)	1,383 (31%)	1,499 (31%)
• Petrochemicals[10]	166 (3%)	250 (6%)	52 (1%)
• Other	138 (3%)	155 (3%)	147 (3%)
Pavlodar Refinery	**4,794 (100%)**	**4,609 (100%)**	**4,935 (100%)**
• Light	3,600 (75%)	3,438 (75%)	3,736 (76%)
• Dark	894 (19%)	896 (19%)	862 (18%)
• Other	300 (6%)	275 (6%)	337 (7%)
Shymkent Refinery (50%)	**2,477 (100%)**	**2,145 (100%)**	**2,352 (100%)**
• Light	2,028 (82%)	1,970 (92%)	2,035 (87%)
• Dark	447 (18%)	172 (8%)	313 (13%)
• Other	2	3	4
CASPI BITUM (50%)	**439 (100%)**	**428 (100%)**	**460 (100%)**
• Dark	185 (42%)	185 (43%)	203 (44%)
• Other	254 (58%)	243 (57%)	257 (56%)
Total	**12,602**	**11,707**	**12,614**

Refining volumes at Kazakhstan refineries

Hydrocarbon refining and production of oil products

In 2021, hydrocarbon refining volumes at Kazakhstan refineries (net to KMG) amounted to 13,927 ths tonnes, with oil product output at 12,614 ths tonnes. Year-on-year, hydrocarbon refining and oil product output were up 8.4% and 7.7% respectively mainly due to the restoration of pre-pandemic refining volumes and a return to average annual indicators.

[7] Calculation methodology adjusted, the data on oil products produced from hydrocarbon feedstocks now reflect the components that make up finished products (the data presented in the 2019 Annual Report disregarded the involved components).
[8] Including petrol, diesel fuel, jet fuel and LNG.
[9] Including fuel oil, vacuum gas oil and bitumen.
[10] Including benzene and paraxylene.

Production and marketing of oil products derived from KMG's own oil

JSC OzenMunaiGas, JSC Embamunaigas, Kazakhturkmunay LLP and Urikhtau Operating LLP supply Atyrau, Pavlodar and Shymkent refineries with KMG's own crude oil, and the resulting refined products are subsequently sold wholesale domestically or for export.

In 2021, OzenMunaiGas, Embamunaigas, Kazakhturkmunay and Urikhtau Operating supplied 4,458 ths tonnes of crude oil for refining, including 2,781 ths tonnes to Atyrau Refinery, 1,527 ths tonnes to Pavlodar Refinery, and 150 ths tonnes to Shymkent Refinery. The refineries' combined output for the year was 4,419 ths tonnes of refined products, including 59% of light products, 23% of dark products, 0.6% of petrochemicals, and 17% of other oil products..

KMG sells oil products wholesale after the oil purchased from OzenMunaiGas, Embamunaigas, Kazakhturkmunay and Urikhtau Operating is refined at refineries in Kazakhstan. In 2021, KMG sold 4,454 ths tonnes of oil products, primarily light products and fuel oil (77%).

The bulk of oil products was sold domestically (3,577 ths or 80% out of 4,454 ths tonnes), and the remainder was exported (877 ths tonnes). The share of oil product exports was down 12% year-on-year due to a ban on light product exports.

Refinery output of oil products derived from KMG's own oil in 2021, ths tonnes

Oil products	Atyrau Refinery	Pavlodar Refinery	Shymkent Refinery	Total	Average oil product wholesale prices over 12M 2021, KZT per tonne
Light	1,538	964	105	2,606	165,873.50
Dark	764	248	20	1,032	122,543.60
Petrochemicals	27	0	0	27	253,532.90
Other	416	318	21	755	33,628.95
Total	**2,744**	**1,530**	**146**	**4,419**	**134,191.43**

Hydrocarbon refining volumes (net to KMG), ths tonnes

Refinery	2019	2020	2021
Petromidia Refinery	6,331	4,864	4,586
Vega Refinery	436	364	321
Total	**6,767**	**5,228**	**4,907**

Oil product output (net to KMG), ths tonnes

Refinery	2019	2020	2021
Petromidia Refinery	**6,172**	**4,749**	**4,470**
• Light[1]	5,225	4,009	3,590
• Dark[2]	736	575	530
• Other	211	165	152
Vega Refinery	**442**	**361**	**320**
• Dark	120	123	93
• Other	321	238	226
Total	**6,614**	**5,110**	**4,790**

Refining in Romania

The core business of KMG International is hydrocarbon refining, as well as wholesale and retail sales of oil products. The KMG International-owned Petromidia Refinery is responsible for primary hydrocarbon refining, with the Vega Refinery focusing on secondary refining. The Petromidia and Vega Refineries operate according to the model where refineries purchase hydrocarbons for their own account, refine them and then sell them either wholesale

[1] Including petrol, diesel fuel, jet fuel and LNG.

[2] Oil coke, fuel oil, natural gasoline.

or retail through an owned retail network of filling stations.

KMG International also owns a major petrochemical complex producing polypropylene and low- and high-density polyethylene (LDPE and HDPE). In addition, KazMunayGas Trading AG, the trading subsidiary of KMG International, is focused on trading in crude oil and oil products produced by KMG International refineries or by third parties.

In 2021, our refineries in Romania processed 4,907 ths tonnes of hydrocarbons and other feedstocks and produced 4,790 ths tonnes of oil products. The volumes decreased by 6% year-on-year on average. The decline in crude oil refining was attributable to an incident at Petromidia Refinery which caused a fire at the diesel hydrotreating plant. Rapid action was taken and all facilities were shut down. The refinery resumed its operations in a limited mode on 24 September.

In 2021, Petromidia's refining margin calculated as the difference between Urals crude prices and oil product prices (petrol, diesel fuel, naphtha, liquefied gas, jet fuel, fuel oil, propylene, sulphur, and oil coke) amounted to USD 1 per bbl compared to negative values of the previous year (due to the gradual recovery of demand after lifting COVID-related mobility restrictions).

Petromidia Refinery's refining margin

Unit	2019	2020	2021
USD per tonne	31.7	-5	7.2
USD per bbl[3]	4.2	-0.7	1

Crude oil for resale, ths tonnes

	2019	2020	2021
Crude oil for resale	10,911	8,522	8,342

In 2021, crude oil volumes for resale marketed through KMG International's trading operations totalled 8.3 mln tonnes. The 2.4% reduction was due to the fall in demand amid the COVID-19 pandemic.

KMG International's retail network

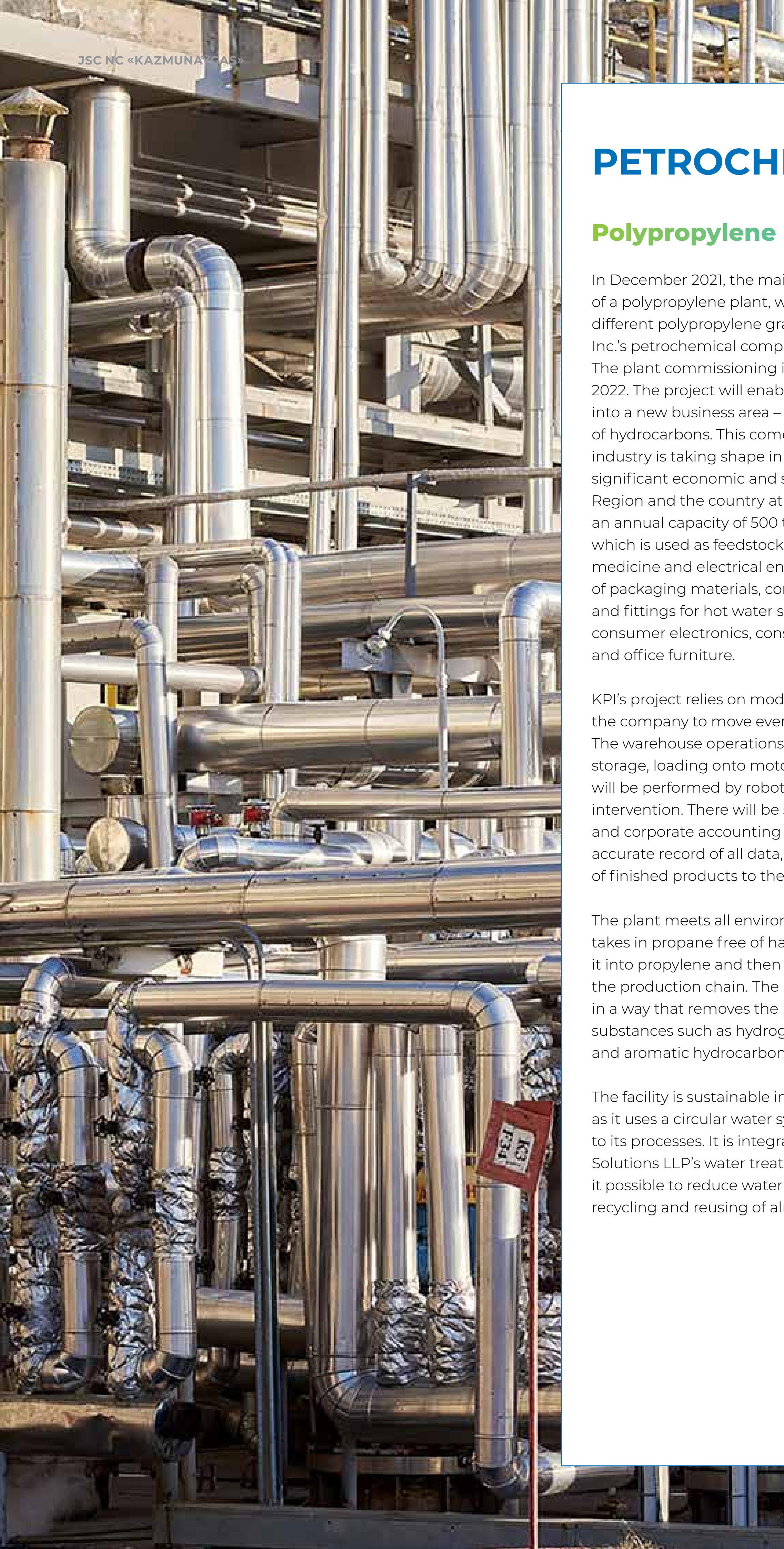
Romania's retail market is the most profitable market for KMG International's oil products. In 2021, we completed the programme of Romanian retail chain involving the construction of 25 new filling stations supported by the Kazakh-Romanian Investment Fund.

KMG International's share of the Romanian retail market in 2021 is estimated at 16.3%, up 0.6% year-on-year (16.3% in 2021 vs 15.7% in 2020) and higher than in 2019 (14.8%).

At year-end 2021, KMG International's retail network was comprised of the following assets:

- Romania: 294 filling stations and 913 points of sale (DOEX, RBI and Cuves). 3 CODO, 7 DODO, 11 DOEX, 45 RBI и 86 Cuves stations were opened
- Neighbouring countries: 280 filling stations and points of sale, including 60 stations in Bulgaria, 109 stations in Georgia (13 new stations in key regions) and 99 stations in Moldova (7 new DOCO stations added to the retail network compared to 2020, but with 6 stations below the plan for 2022 due to several loss-making stations in rural regions).

[3] To convert tonnes to bbl a conversion factor of 7.6 was used.



PETROCHEMICALS

Polypropylene

In December 2021, the main construction of a polypropylene plant, which will produce over 65 different polypropylene grades, was completed at KPI Inc.'s petrochemical complex in the Atyrau Region. The plant commissioning is scheduled for March 2022. The project will enable KazMunayGas to expand into a new business area – deeper processing of hydrocarbons. This comes as the new petrochemicals industry is taking shape in Kazakhstan to bring significant economic and social benefits to the Atyrau Region and the country at large. The facility has an annual capacity of 500 ths tonnes of polypropylene, which is used as feedstock in mechanical engineering, medicine and electrical engineering, production of packaging materials, containers, fibre, pipes and fittings for hot water supply, office equipment, consumer electronics, consumer goods, outdoor and office furniture.

KPI's project relies on modern technology, enabling the company to move ever closer to full digitalisation. The warehouse operations such as packaging, storage, loading onto motor vehicles and rail wagons will be performed by robotic machines without human intervention. There will be specialised IT solutions and corporate accounting systems in place to make accurate record of all data, from planning to sales of finished products to the end consumer.

The plant meets all environmental regulations. It takes in propane free of harmful impurities to turn it into propylene and then polypropylene all through the production chain. The processes are designed in a way that removes the possibility of harmful substances such as hydrogen sulphide, sulphur dioxide and aromatic hydrocarbons being produced.

The facility is sustainable in terms of water consumption, as it uses a circular water system to supply water to its processes. It is integrated with Karabatan Utility Solutions LLP's water treatment facilities, which makes it possible to reduce water consumption through recycling and reusing of almost all wastewater.

Polyethylene

On 7 October 2021, as part of the second phase of the integrated petrochemical complex construction, KMG and SIBUR signed a Cooperation Agreement for the Polyethylene (PE) Project. The move is in line with KMG's strategy to join forces with a strategic partner which is among Top 5 polymer companies in the world and has a strong track record of successfully delivering large-scale projects. By April 2022, the parties plan to sign binding documents for SIBUR to join the PE project and to progress to the FEED stage. The complex will have a capacity of 1,250 ths tonnes of PE per year. The project is expected to be completed in 2027.

The strategic partner will be required to supply feedstock (ethane) to the Project. To this end, negotiations are ongoing with Tengizchevroil LLP to consider building a gas separation unit with a capacity of 9.7 bln m^3 (the GSU) to create infrastructure for extracting ethane from dry gas.

Polyethylene and ethylene copolymers are widely used in pipes, fittings, sheets, tubular films, flat-slot extrusion films, fibres, nonwoven materials, filaments, film thread, packaging materials, packaging for technical, household and medical items, food, toys, etc.

Polyethylene can be one of the following types depending on its properties and applications:

- depending on density: linear low-density polyethylene (LLDPE), medium density polyethylene (MDPE) and high density polyethylene (HDPE)
- depending on composition: ethylene homopolymers and ethylene copolymers with various combinations of alpha olefins such as butene, hexene or octene
- depending on structure: bimodal and monomodal grades (with broad, medium and narrow molar mass distribution).

Depending on production technology: high, low and medium pressure polyethylene. Each of these types has its own properties which define their application.

Chemical properties of polyethylene

Granulated polyethylene is a non-hazardous non-toxic product. It does not produce toxic emissions at room temperature and is not harmful to human health if in contact with skin. No special precautions are required for working with it.

Small polymer dust when breathed in and entering the lungs can cause sluggish fibrotic changes in the lungs.

Due to its low conductivity, polyethylene can generate static electric charges.

When in a stable state, polyethylene is not harmful to the environment as it does not form toxic compounds at ambient temperature when exposed to atmosphere or wastewater where other substances or factors are present. Polyethylene and the additives it contains are known to cause no damage to the ozone layer.

Rubber, isobutane

On 30 November 2021, JSC NC KazMunayGas and PJSC Tatneft signed an agreement to set up a butadiene rubber joint venture. The facility is expected to have a capacity of 186 ths tonnes of polybutadiene rubber per year – up to 96 ths tonnes of solution styrene-butadiene rubber (SSBR) per year, up to 90 ths tonnes of styrene-butadiene-styrene (SBS) per year and up to 170 ths tonnes of isobutane per year. The project is expected to be completed in 2026.

SSBR (solution styrene-butadiene rubber) is a common component of green tyres, which have high durability, resistance to low temperatures and dynamic strength. It is also used to produce hoses, conveyor belts, footwear and other rubber products.

SBS (styrene-butadiene-styrene) is used to make bitumen blends, adhesives, glues and rubbers. It has high resistance (including resistance to tension) and density.

Isobutane can be converted to isobutylene, which can be then converted to isobutylene-isoprene rubber. It is used in the alkylation reaction and for MTBE production. Isobutane is also a component of high octane fuel for internal combustion engines and a common aerosol propellant.

SERVICE PROJECTS

KMG coordinates service projects by maintaining current production levels, implementing new projects, and improving competitiveness as well as takes into account its leading role in maintaining social stability in the regions of its footprint. It should be noted that oilfield services are socially sensitive and sometimes even unprofitable. This inevitably leads to extra costs resulting from the need to retain employees regardless of current operational needs and meet all obligations under the collective bargaining agreement: benefits, medical insurance premiums, and upskilling costs.

SERVICE INFRASTRUCTURE

KMG's oil service operations are supported by 11 key companies.

Key oil services

- Drilling and developing oil and gas wells
- Providing well services and workovers
- Transporting freight and passengers, providing field transportation and maintenance
- Providing maintenance, repair, set-up, and testing services for electrical installations and cathode protection; commissioning and routine servicing of electrical equipment
- Operating offshore and onshore drilling rigs, oil and gas production engineering, drilling services
- Servicing measuring equipment, automation systems, and telemechanics, providing telecoms, radio, and cable or satellite TV services at oil fields; checking and repairing measuring equipment; and servicing security alarms
- Servicing transport GPS monitoring systems
- Building steel and fiberglass pipelines for oil transportation, building gas pipelines, and constructing oil and injection wells
- Reconstructing oil pipelines, water pipelines, and roads
- Producing and transporting drinking water, ensuring sea water transport
- Catering, maintaining social facilities, etc.

To maintain the current production levels, KMG holds annual activities aimed at ensuring efficient production, improving working conditions, and upgrading fixed assets. In 2021, service tariffs for some oilfield service subsidiaries and associates were increased, for example, for Oil Services Company LLP for drilling at Kalamkas and Zhetybai fields, well workover, and servicing as well as for Oil Transport Corporation LLP for provision of vehicles and special equipment.

Development projects

To implement the Government's Regulation On Approval of the Comprehensive Plan of Social and Economic Development of Zhanaozen, the Mangystau Region, for 2019–2025, KMG is implementing the project on construction of a gas processing plant in Zhanaozen. The project is important for KMG due to the risk of complete shutdown of existing KazGPZ in the result of high wear and operation of the process equipment in excess of industry norms, which will entail complete shutdown of oil and gas extraction facilities of the subsoil users supplying gas for processing, shortage of commercial (dry) gas and liquefied petroleum gas (LPG). The new gas processing plant is to be completed in 2024.

On 12 August 2021, Caspian Drilling Company Ltd. (CDC) held a ceremony at its marine logistics base to celebrate successful upgrade of a jack-up floating drilling rig and its putting to sea to commence drilling at the Azerbaijan sector of the Caspian Sea. On 15 August 2021, the rig was installed at the first well, NKX-01, of SWAP structure, and successful drilling operations are in progress.

Satti jack-up floating drilling rig is the first drilling rig built entirely in Kazakhstan according to the world standards. On 25 January 2019, KMG and SOCAR State Oil Company of the Azerbaijan Republic signed the Memorandum of Understanding as well as Joint Venture Agreement on the rig operation to perform drilling at Absheron structure, Azerbaijan sector of the Caspian

THE UPGRADED RIG CAPACITY INCREASE

FROM 453 TO 680 TONNES

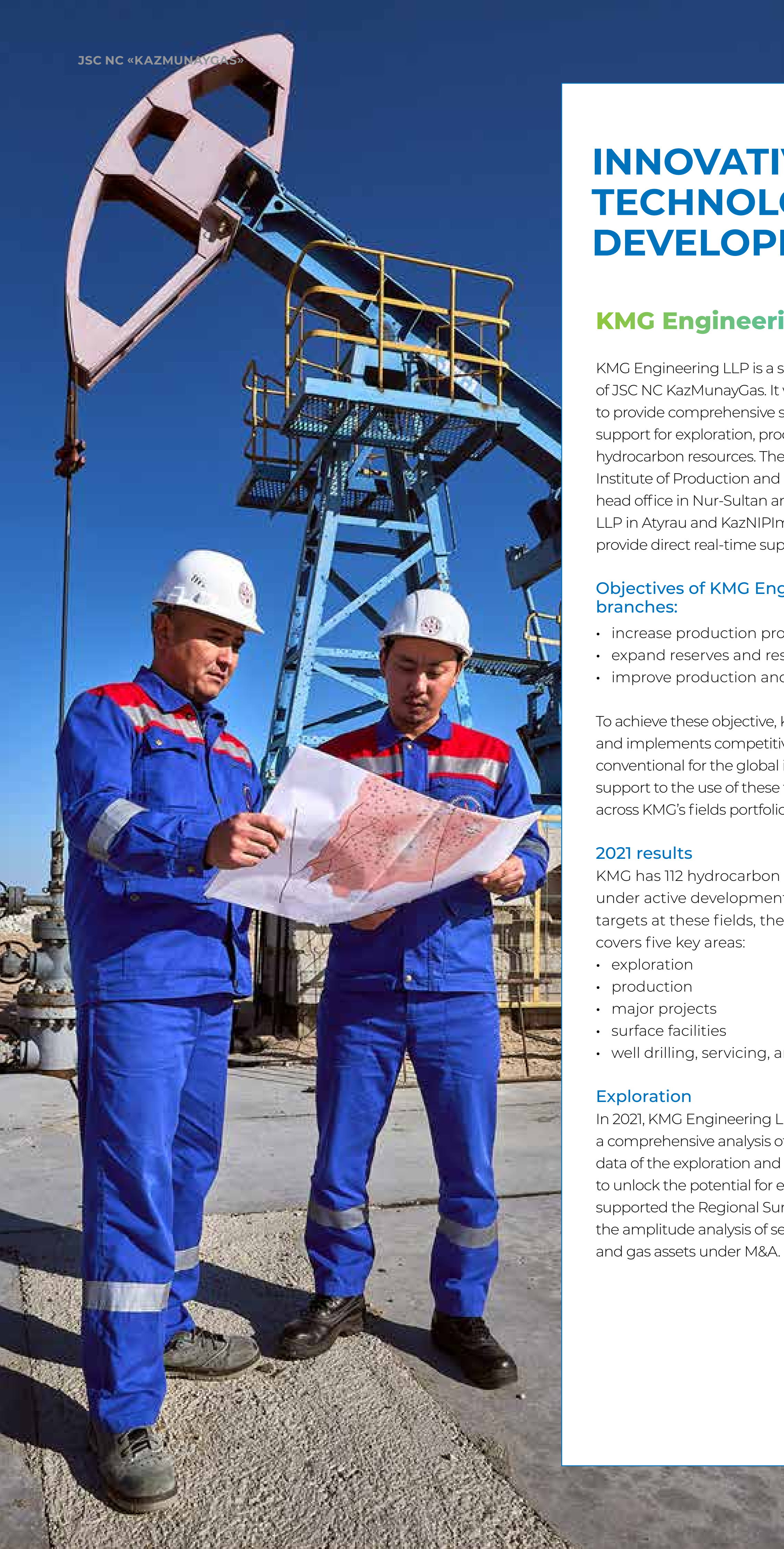
Sea, operated by British Petroleum. The upgraded rig capacity increased from 453 to 680 tonnes.

Implementation of the project will improve KMG's competitiveness, provide the opportunity to become one of the offshore drilling leaders, and raise professional qualification of the operational staff according to the global criteria.

To maintain and develop oilfield services in 2022 and beyond, KMG has defined the following strategic initiatives for improving the service quality that will contribute to oil production ramp-up:

- Building an efficient target portfolio of oilfield services
- Making oilfield service companies breakeven

Various measures are required to achieve these objectives, including business process automation, implementation of allocation metering, improvement of production process efficiency, API Q1 and Q2 certification.



INNOVATIVE TECHNOLOGY DEVELOPMENT

KMG Engineering

KMG Engineering LLP is a scientific research centre of JSC NC KazMunayGas. It was founded in 2014 to provide comprehensive scientific and engineering support for exploration, production, and drilling of KMG's hydrocarbon resources. The Research and Development Institute of Production and Drilling Technology has its head office in Nur-Sultan and two branches, Atyrau Branch LLP in Atyrau and KazNIPImunaygas LLP in Aktau, which provide direct real-time support for KMG's assets.

Objectives of KMG Engineering LLP and its branches:

- increase production profitability
- expand reserves and resource base
- improve production and programme efficiency.

To achieve these objective, KMG Engineering LLP develops and implements competitive technologies and procedures conventional for the global industry, provides expert support to the use of these technologies and procedures across KMG's fields portfolio.

2021 results

KMG has 112 hydrocarbon fields, including 81 fields under active development. To achieve the production targets at these fields, the work of KMG Engineering covers five key areas:

- exploration
- production
- major projects
- surface facilities
- well drilling, servicing, and workover.

Exploration

In 2021, KMG Engineering LLP carried out a comprehensive analysis of geological and geophysical data of the exploration and production projects to unlock the potential for expanding the resource base, supported the Regional Survey Programme, performed the amplitude analysis of seismic data, and assessed oil and gas assets under M&A.

KMG Engineering LLP developed the detailed further exploration programme for the Karazhanbas field (JSC Karazhanbasmunai) and updated the follow-up data of the approved detailed further exploration programmes for JSC Ozenmunaigas, JSC Mangistaumunaigaz, JSC Embamunaigas, and Kazakhturkmunay LLP, which included support in 2D/3D seismic data processing and interpretation as well as support in coring and development well testing.

Successful implementation of exploration and production projects requires timely acquisition of up-to-date information and integrated use of reams of historical, geological, geophysical, and field data. KMG Engineering LLC has implemented the Centralised Database information system to ensure efficient centralised management of information systems containing large volumes of data.

Production

The institute piloted advanced drilling technologies: horizontal wells, horizontal wells with multi-stage fracturing, side-tracking, and deepening, which resulted in a considerable oil output growth at a lower cost. It is expected that drilling cost optimisation (replacement of vertical wells with side-tracking and deepening) will ensure CAPEX savings while maintaining the efficiency.

The use of general standard criteria, including comprehensive ranking based on profitability, improves the selection of well intervention measures resulting in higher output at a lower cost.

Corrosion monitoring and infrastructure integrity are among the major challenges for KMG's mature fields. The new recently implemented technologies include injection of bactericides to prevent biological contamination of reservoirs, injection of corrosion and scale inhibitors at suction pumps in producing wells, use of submerged motor pumps and production tubing with protective coating. These measures resulted in positive technical and economic effect and extended the run time of the subsurface pumping equipment meaning more oil output at less cost.

Development and implementation of optimal well intervention measures to increase production at Kazakhturkmunay LLP is a remarkable example of the production unit's successful operations. The expenses were recouped within five months. The use of advanced technologies will maintain the achieved production level within five years. It is planned to replicate this successful practice at other KMG's fields.

Major projects

KMG Engineering LLP activities include R&D support for offshore projects (Kashagan, Kairan, Aktoty) and onshore projects of Tengizchevroil LLP (Tengiz, Korolevskoye) and Karachaganak Petroleum Operating B.V. (Karachaganak).

Participation of technical specialists from the Company's major project unit in working groups and technical meetings with the project partners – North Caspian Operating Company, Tengizchevroil LLP, and Petroleum Operating B.V. – results in high-quality review of the development projects and cost optimisation, generating greater value for KMG from these strategic assets.

- Tengizchevroil: drilling of 55 directional wells under the Future Growth Project / Wellhead Pressure Management Project. The project on Alb-Cenomanian water injection for reservoir pressure maintenance at the Korolevskoye field was completed. Trial water injection of 15,000 bbl per day was commenced. Design of ethane separation from Tengizchevroil's commercial gas with further supply of ethane to KLPE was completed.
- Karachaganak: the fourth compressor is under start-up. KEP-1A, 1B projects are underway. Additional drilling of 6–8 wells as part of the project will maintain the production plateau.
- Kashagan: VSMA 1 project to increase productivity from 400,000 to 450,000 bbl per day, including construction of a gas processing plant with a capacity of 1 bln m³ per year by JSC NC QazaqGaz. The concept of productivity increase to 1 mln bbl per day is under development. Previously made artificial islands are used for drilling. Bolashak waste water treatment project is underway.

Well drilling and workover

KMG Engineering LLP has the Online Drilling Competence Centre in place to monitor drilling and render geological and engineering support in real time. Implementation of an integrated drilling reporting system is also underway.

Drilling of new wells is one of the main ways to sustain oil production at the mature fields of KMG's subsidiaries and associates. In addition to vertical wells, the amount of horizontal wells drilled every year is increasing. The key advantages of horizontal wells include reduced total amount of wells at the fields, increased oil recovery, development of new oil reservoirs and high-viscosity oil.

In 2021, the average reservoir penetration by 16 horizontal wells was 86%. The horizontal well rates are on average three to four times higher tha vertical well rates at the same fields of KMG's subsidiaries and associates.

The works conducted at KMG's subsidiaries and associates resulted in the cementing strength of completed

well production strings of 72% in 2019–2021 compared to 67% in 2017–2018.

Well workover is the key to operability of the well stock. Its efficiency is analysed by types of workovers. Well-work instructions are being developed to define the common procedure and technical requirements. Continued efforts are taken to identify and implement advanced technologies to eliminate casing pressure and perform remedial cementing.

In 2021, regulations to monitor, control, and eliminate casing pressure in wells at the fields of KMG's subsidiaries and associates were developed. The technology eliminating casing pressure using Aquascreen synthetic compound was piloted.

Surface facilities and infrastructure

To extend the field production life and keep the process control systems up to date, KMG Engineering LLP opened the Surface Facilities Unit dealing with infrastructure integrity, reliability, and optimisation.

Production automation and hydrocarbon metering system optimisation

Particular attention is paid to implementation of advanced automation and digitalisation systems as part of optimising oil and gas condensate metering systems of JSC NC KazMunayGas production assets. Automated control systems are gradually updated and modern measuring equipment is installed at all stages of oil and gas production, from a well to the delivery of hydrocarbons to the pipeline system. To ensure compliance with ST RK 2.151-2008 Metering of Extracted Oil and Oil Gas, measures are taken to improve the metering system by replacing volumetric oil flow meters with Coriolis flow meters (mass meters) measuring two phases of liquid.

Another important area includes scientific and methodological support provided by KMG Engineering LLP. Its staff carries out technical inspections of subsidiaries' and associates' production facilities to check the instruments and controls used. The results of such inspections make it possible to analyse the current state of automated oil, gas, and water metering systems and equipment, check compliance

with the regulations of the Republic of Kazakhstan in terms of measurement uniformity, and define recommended measures for JSC NC KazMunayGas production assets to be included in action plans.

For example, JSC Mangistaumunaigaz has been renovating telemechanics systems at its production facilities since 2019. Since 2021, Kazakhturkmunay LLP has been implementing the process automation system at its production facilities and remote control systems for wells at Karatobe South, Laktybai and a head pump station at Kenkiyak.

To improve metering quality and accuracy of outdated metering stations as well as to standardise the equipment, JSC Ozenmunaigas, JSC Mangistaumunaigaz, JSC Embamunaigas, JSC Karazhanbasmunai, and Kazakhoil Aktobe LLP are gradually upgrading and replacing the metering system of group units and automated group metering stations.

To comply with the Kazakhstan's Code on Subsoil and Subsoil Use, an Information System of Crude Oil and Gas Condensate Metering for automated daily collection, processing and storage of data on available crude oil and condensate gas was developed. In 2021, JSC NC KazMunayGas completed the transfer of data from commercial metering stations of seven operating production assets of JSC NC KazMunayGas into the Information System of Crude Oil and Gas Condensate Metering using the ABAI system.

ABAI DATABASE IS AN IN-HOUSE DATA IMPORT AND STORAGE SYSTEM. IT ALSO GENERATES PRODUCTION REPORTS AND ENSURES PROMPT ACCESS TO ALL KMG EXPLORATION AND PRODUCTION DATA

FINANCIAL REVIEW

STATEMENT FROM THE DEPUTY CHAIRMAN OF THE MANAGEMENT BOARD FOR ECONOMICS AND FINANCE

Dear Investors, Shareholders, Colleagues and Partners,

On the back of combined external factors, the Company gradually restored its financial performance to the pre-pandemic level in 2021. Recovering global oil demand and oil market management efforts by OPEC+ were the key drivers that pushed oil prices up. The average annual price of Brent crude oil was USD 71 per bbl, up 70% year-on-year.

Maintaining the financial stability of the Company was one of the key objectives of KMG's crisis response strategy for 2020 and 2021. The results for the year showed that we were able to significantly mitigate the impact of the economic crisis on the Company's operational activity, maintain our financial stability, and ensure sufficient conditions for our development in the long term.

Special attention was given to the measures strengthening the financial positioning of the Company, which created a range of practices in case of possible macroeconomic shocks. Due to timely crisis response during the pandemic, the financial performance of the Company exceeded our expectations.

As at the end of 2021, our total debt stood at USD 8.7 bln, which reflects a decrease by KZT 1 bln. KTG spin-off reduced the Company's debt by USD 1.1 bln. As a result of debt management during the last three years, the schedule of large repayments on the Company's Eurobonds was revised and redirected to the current needs and strategic decisions of the Company, with the next large lump-sum repayment scheduled for as far in the future as 2027. Since 2017, our total debt has decreased from USD 16 bln in 2017 to USD 8.7 bln.

Optimisation of planned CAPEX and OPEX resulted in free cash flow of USD 1.6 bln. In 2021, we ensured that our subsidiaries operated without cash gaps.

In confirmation of our financial stability, we were able to maintain our credit ratings from Moody's, Fitch, and S&P this year. We will continue our crisis response efforts in 2022 while staying committed to the Company's strategic priorities, taking into account external social and economic factors and global management practices, keeping in mind the importance of enhancing the role of ESG across the Company.

Despite macroeconomic uncertainty, the Company still adheres to the principles of timeliness, completeness, and availability of disclosures to the investment community.

Dauren Karabayev,
Deputy Chairman
of the Management Board –
Chief Financial Officer
of JSC NC KazMunayGas

KMG'S CREDIT RATINGS

KMG intends to maintain investment-grade credit ratings and a high credit profile, and ensure that it maintains its business image as a bona fide borrower. In 2021, KMG's efforts to support its financial stability helped the Company maintain its credit ratings despite negative external factors.

Change in KMG's ratings

- On 28 January 2021, following the revision of its risk assessment for the oil and gas exploration, production and refining sector, S&P Global Ratings affirmed KMG's credit ratings at BB with a negative outlook
- On 30 April 2021, S&P Global Ratings affirmed KMG's credit ratings at BB with a negative outlook
- On 12 August 2021, Moody's Investors Service upgraded KMG's credit rating from Baa3 to Baa2 due to an upgrade of Kazakhstan's sovereign rating. The rating outlook was changed from positive to stable
- On 20 September 2021, Fitch Ratings affirmed KMG's long-term issuer default rating at BBB– (one notch below the sovereign rating) with a stable outlook.

KMG's credit ratings

MOODY'S	S&P	FITCH
Baa1	BBB+	BBB+
Baa2 (Stable)	BBB	BBB
Baa3	BBB-	**BBB-(Stable)**
Ba1	BB+	BB+
Ba2	**BB (Negative)**	BB
Ba3	BB-	BB-

MOODY'S	S&P	FITCH
Baa2 (Stable)	**BBB- (Stable)**	**BBB (Stable)**

Kazakhstan's sovereign ratings

For more details see the Shareholder and investor relations section

KEY 2021 FINANCIAL RESULTS[1]

In 2021, Revenue was

KZT 5,839 BLN
(USD 13,704 MLN)
compared to KZT 3,625 bln (KZT 8,767 mln) in 2020

EBITDA amounted to

KZT 1,609 BLN
(USD 3,776 MLN)
compared to KZT 810 bln (USD 1,960 mln) in 2020

Adjusted EBITDA amounted to

KZT 1,256 BLN
(USD 2,947 MLN)
compared to KZT 664 bln (USD 1,607 mln) in 2020

Net profit for the period was

KZT 1,197 BLN
(USD 2,810 MLN)
compared to KZT 172 bln (USD 416 mln) in 2020.

Free Cash Flow was

KZT 669 BLN
(USD 1,570 MLN)
compared to KZT 50 bln (USD 121 bln) in 2020

Gross debt as at 31 December 2021 was

KZT 3,746 BLN
(USD 8,676 MLN),
down 8.1% compared to KZT 4,078 bln (USD 9,690 mln) as at 31 December 2020

Net debt as at 31 December 2021 was

KZT 2,204 BLN
(USD 5,104 MLN),
down 15% compared to KZT 2,594 bln (USD 6,162 mln) as at 31 December 2020

Net profit for the period attributable to the parent company's shareholders was

KZT 1,216 BLN
(USD 2,853 MLN)

For more details see the Financial Statements section

Consolidated financial results according to IFRS

Indicator	Unit	2021	2020
Dated Brent, average[1]	USD/bbl	70,91	41,84
Average exchange rate	KZT/USD	426,06	413,26
Period-end exchange rate	KZT/USD	431,80	420,91
Revenue	KZT bln	5 839	3 625
	USD mln	13 704	8 767
Share in profit of JVs and associates	KZT bln	769	281
	USD mln	1 804	679
Net profit[2]	KZT bln	1 197	172
	USD mln	2 810	416
Net profit for the period attributable to the parent company's shareholders	KZT bln	1 216	273
	USD mln	2 853	661
EBITDA[3]	KZT bln	1 609	810
	USD mln	3 776	1 960
Adjusted EBITDA[4]	KZT bln	1 256	664
	USD mln	2 947	1 607
Free Cash Flow[5]	KZT bln	669	50
	USD mln	1 570	121
Gross debt[6]	KZT bln	3 746	4 078
	USD mln	8 676	9 690
Net debt[7]	KZT bln	2 204	2 594
	USD mln	5 104	6 162

[1] For reader convenience, amounts in USD were converted at the average exchange rate for the applicable period (average exchange rates for 2021 and 2020 were 426.06 and 413.46 KZT/USD, respectively; period-end exchange rates as at 31 December 2021 and 31 December 2020 were 431.80 and 420.91 KZT/USD, respectively).

[2] Net profit includes Net profit after income tax for the year from discontinued operations of JSC NC QazaqGaz (formerly – JSC KazTransGas).

[3] EBITDA = revenue plus share in profit from JVs and associates, net, minus cost of purchased oil, gas, oil products and other materials minus production expenses minus G&A expenses minus transportation and selling expenses minus taxes other than income tax

[4] Adjusted EBITDA = revenue minus cost of purchased oil, gas, oil products and other materials minus production costs minus G&A expenses minus transportation and selling expenses minus taxes other than income tax plus dividends received from joint ventures and associates.

[5] Free cash flow = cash flow from operating activities (including dividends received from joint ventures and associates) minus acquisition of property, plant and equipment, intangible assets, investment properties, exploration and evaluation assets.

[6] Total debt includes Bonds and Borrowings (current and non-current). Guarantees issued are not included in the calculation.

[7] Net debt = Bonds plus Borrowings minus cash and cash equivalents minus short-term and long-term bank deposits. Guarantees issued are not included in the calculation.

Consolidated statement of profit and loss

Indicator	Unit	2021	2020	Change
Revenue and other income				
Revenue	KZT mln	5 838 793	3 624 964	2 213 829
Share in profit from joint ventures and associates, net	KZT mln	768 733	280 815	487 918
Finance income	KZT mln	84 599	87 987	(3 388)
Gain on sale of joint ventures	KZT mln	19 835	0	19 835
Other operating income	KZT mln	30 779	19 020	11 759
Total revenue and other income	KZT mln	6 742 739	4 012 786	2 729 953
Costs and expenses				
Cost of purchased oil, gas, oil products and other materials	KZT mln	(3 596 491)	(1 901 236)	(1 695 255)
Production expenses	KZT mln	(693 031)	(656 178)	(36 853)
Taxes other than income tax	KZT mln	(428 639)	(254 322)	(174 317)
Depreciation, depletion and amortisation	KZT mln	(322 068)	(317 427)	(4 641)
Transportation and selling expenses	KZT mln	(131 912)	(137 144)	5 232
General and administrative expenses	KZT mln	(148 478)	(146 625)	(1 853)
Impairment of property, plant and equipment, exploration and evaluation assets, intangible assets and assets classified as held for sale	KZT mln	(20 724)	(243 893)	223 169
Exploration expenses	KZT mln	(79 083)	(19 807)	(59 276)
Impairment of investments in joint venture and associate	KZT mln	(64)	(30 654)	30 590
Finance costs	KZT mln	(249 265)	(265 372)	16 107
Net foreign exchange gain/(loss)	KZT mln	17 781	(16 189)	33 970
Other expenses	KZT mln	(24 510)	(28 094)	3 584
Total costs and expenses	KZT mln	(5 676 484)	(4 016 941)	(1 659 543)
Profit/(loss) before income tax	**KZT mln**	**1 066 255**	**(4 155)**	**1 070 410**
Income tax expenses	KZT mln	(221 393)	(85 276)	(136 117)
Profit/(loss) for the year from continuing operations	**KZT mln**	**844 862**	**(89 431)**	**934 293**
Discontinued operations				
Profit after income tax for the year from discontinued operations	KZT mln	352 478	261 328	91 150
Net profit for the year	KZT mln	1 197 340	171 897	1 025 443
Net profit/(loss) for the year attributable to:				
the parent company's shareholders	KZT mln	1 215 561	273 237	942 324
the non-controlling interest	KZT mln	(18 221)	(101 340)	83 119
	KZT mln	**1 197 340**	**171 897**	**1 025 443**

Revenue

Revenue for 2021 was KZT 5,839 bln (USD 13,704 mln), up 61.1% year-on-year. The uptrend was mainly attributable to the growth of Brent crude price by 69.5% year-on-year, tenge's depreciation against US dollar by 3.0% year-on-year, and higher volumes of oil trading and sales by KMG International N.V. (KMGI). The revenue growth was curbed by production cuts at certain fields in accordance with OPEC+ deal and natural decline in production from mature fields.

Share in profit from joint ventures and associates

Share in profit from joint ventures and associates more than doubled in 2021, totalling KZT 769 bln (USD 1,804 mln) mainly on the back of an increase in the profit from Tengizchevroil LLP (TCO) by KZT 268 bln (USD 617 mln), KMG Kashagan B.V. (Kashagan) by KZT 95 bln (USD 224 mln), JSC Mangistaumunaigaz (MMG) by KZT 63 bln (USD 148 mln), and KazRosGas LLP by KZT 20 bln (USD 47 mln).

Costs

In the reporting period, the cost of purchased oil, gas, oil products and other materials amounted to KZT 3,596 bln (USD 8,441 mln), reflecting an increase of 89.2% year-on-year, to a great extent due to the growth of average oil price and the tenge's depreciation against US dollar.

Other expenses

In 2021, production expenses increased slightly year-on-year to KZT 693 bln (USD 1,627 mln).

Transportation and selling expenses totalled KZT 132 bln (USD 310 mln), down 3.8% year-on-year.

General and administrative expenses increased by 1.3% to KZT 148 bln (USD 348 mln).

Taxes other than income tax increased by 68.5% to KZT 429 bln (USD 1,006 mln) mainly as a result of higher expenses on rent tax, export customs duty and mineral extraction taxMET as a result of higher oil prices.

Payroll expenses in 2021 amounted to KZT 386 bln (USD 907 mln), showing a 4.2% year-on-year increase, and were reflected in production expenses, transportation and selling expenses, and general and administrative expenses in the consolidated statement of comprehensive income.

Finance costs in 2021 were KZT 249 bln (USD 585 mln), down 6.1% year-on-year, mainly due to early full repayment of bonds due 2022 and 2023.

Impairment of assets

According to the assessment of 2021, the loss on impairment of assets amounted to KZT 21 bln (USD 49 mln), down 92% year-on-year (from KZT 244 bln or USD 590 mln). The amount of loss on impairment includes the impairment of KMG International's assets of KZT 8 bln (USD 19 mln), KZT 4.5 bln (USD 10 mln) for Sunkar, Barys and Berkut self-propelled barges, and KZT 8 bln (USD 19 mln) for other assets. The loss on impairment of assets was significantly lower in 2021, as no signs of impairment of property, plant and equipment, intangible assets, exploration and evaluation assets were identified at JSC Embamunaigas.

Net profit

In the reporting period, the Company's net profit amounted to KZT 1,197 bln (USD 2,810 mln) compared to KZT 172 bln (USD 416 mln) in 2020, showing a significant increase amid higher average oil price, growing revenues and incomes from the share in profit from joint ventures and associates, as well as zero depreciation of property, plant and equipment in 2021.

Net profit for the period attributable to the parent company's shareholders was KZT 1,216 bln (USD 2,853 mln).

CAPEX

In 2021, CAPEX on an accrual basis in the Company's segment reporting was KZT 414 bln (USD 972 mln), down 8.8% year-on-year.

EBITDA

Consolidated EBITDA increased by 98.6% year-on-year to KZT 1,609 bln (USD 3,776 mln) compared to KZT 810 bln (USD 1,960 mln) in 2020.

Adjusted EBITDA increased by 89% to KZT 1,256 bln (USD 2,947 mln) compared to KZT 664 bln (USD 1,607 mln) in 2020.

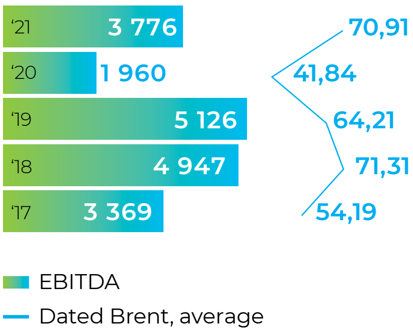
Given the vertically integrated operations of KMG, we analyse EBITDA broken down by the segments below. We analyse segmented information according to IFRS. Segment performance is evaluated based on revenues and net profit. The Group's operating segments have their own structure and management according to the type of produced goods and provided services. Moreover, all segments are strategic directions of the business, which offer different types of goods and services in different markets. The Company's activity consists of four main operating segments: oil and gas exploration and production, oil transportation, refining and sales of crude oil and refined products, NC KMG's Corporate Centre, etc. (oilfield service companies and other insignificant companies). KMG presents the Corporate Centre's activities separately, since NC KMG not only performs the functions of the parent company, but also carries out operational activities (processing of crude oil at Atyrau and Pavlodar refineries, and further sale of oil products to both domestic and export markets).

The key factor that contributed to increase in EBITDA by segment in 2021 was EBITDA increase in Oil and Gas Exploration and Production by KZT 652 bln (USD 1,501 mln) driven by oil price growth.

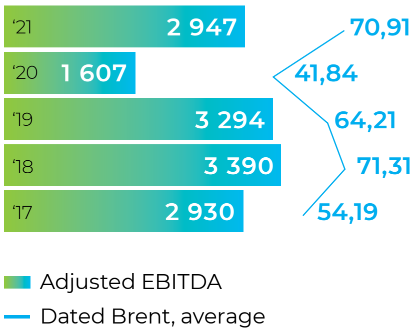
Segmented EBITDA for 2020 and 2021

Segments	Unit	2021	2020	Δ
Oil and gas exploration and production	KZT mln	1 041 811	390 221	651 590
	USD mln	2 445	944	1 519
	%	65	48	17 п.п.
Oil transportation	KZT mln	211 356	226 838	-15 482
	USD mln	496	549	-53
	%	13	28	15 п.п.
Refining and sales of crude oil and oil products	KZT mln	289 422	214 839	74 583
	USD mln	679	520	160
	%	18	27	-9 п.п.
Corporate Centre	KZT mln	71 449	(25 077)	96 526
	USD mln	168	(61)	228
	%	4	-3	8 п.п.
Others	KZT mln	13 359	(5 346)	18 705
	USD mln	31	(13)	44
	%	1	-1	2 п.п.
Elimination	KZT mln	(18 422)	8 799	(27 221)
	USD mln	(43)	21	(65)
	%	-1	1	-2 п.п.
EBITDA	**KZT mln**	**1 608 975**	**810 274**	**798 701**
	USD mln	**3 776**	**1 960**	**1 817**

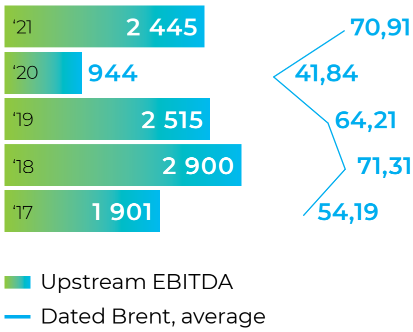
EBITDA evolution in the last five years , USD mln



Adjusted EBITDA evolution in the last five years



Dynamics of adjusted EBITDA of the oil and gas exploration and production segment over the past 5 years



Cash flows

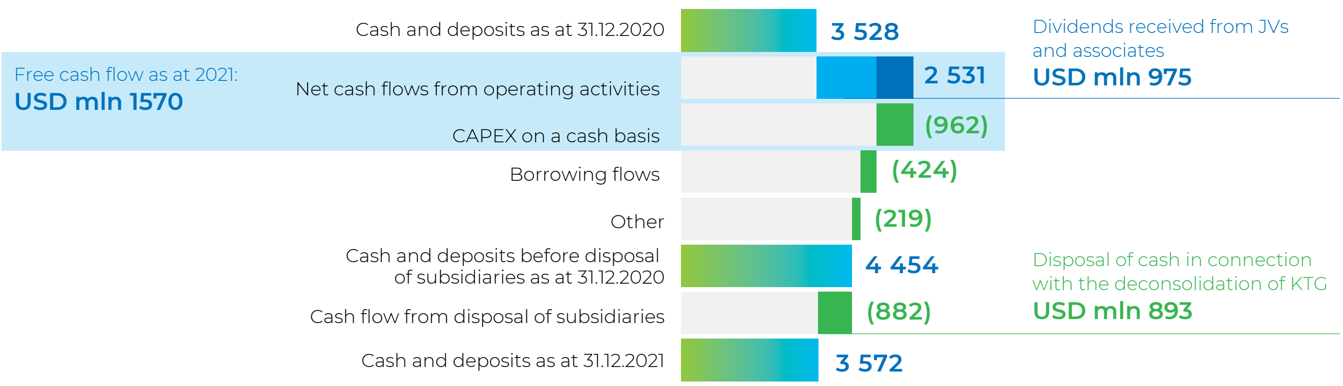
Indicator	Unit	2021	2020	Change
Net cash flows from operating activities	KZT mln	1 078 497	446 533	631 964
Net cash flows used in investing activities	KZT mln	(988 694)	(205 611)	(783 083)
Net cash flows used in financing activities	KZT mln	(282 533)	(245 227)	(37 306)
Effects of exchange rate changes	KZT mln	22 851	85 341	(62 490)
Change in allowance for expected credit losses	KZT mln	(136)	376	(512)
Net change in cash and cash equivalents	**KZT mln**	**(170 015)**	**81 412**	**(251 427)**
Net change in cash and cash equivalents	**USD mln**	**(399)**	**197**	**(596)**

Cash and cash equivalents

Consolidated cash and cash equivalents, including cash on deposit, increased marginally by 3.9% year-on-year to KZT 1,542 bln (USD 3,572 mln) as at 31 December 2021. The increase in cash and cash equivalents is mainly due to a positive net cash flow from operating activities in the amount of KZT 1,078 bln (USD 2,531 mln), which was partly offset by outflow of cash due to deconsolidation of JSC KazTransGas in the amount of KZT 380,438 mln.

US dollar-denominated consolidated cash and cash equivalents increased by 1.3% to USD 3,572 mln compared to USD 3,528 mln as at 31 December 2020.

Cash flows, USD mln



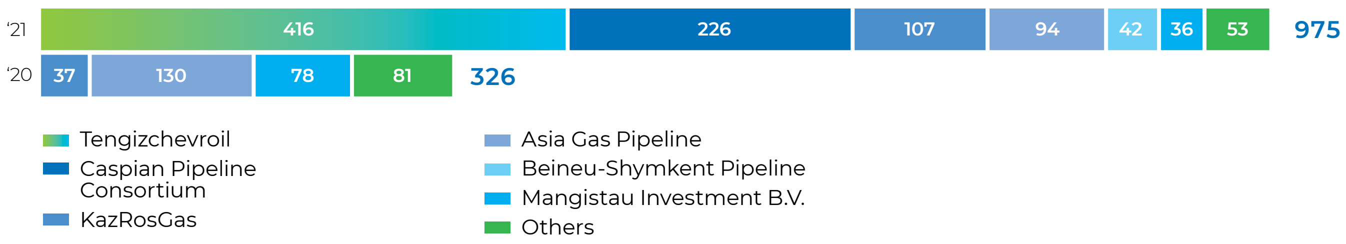
Dividends received

The Company is a parent company of the Group and receives dividends from its subsidiaries and associates, JVs and associated companies. The Company received dividends in the amount of KZT 415 bln (USD 976 mln) and KZT 135 bln (USD 326 mln) in 2021 and 2020, respectively. In 2021, dividends from Tengizchevroil amounted to KZT 177 bln (USD 416 mln), from Caspian Pipeline Consortium – KZT 96 bln (USD 226 mln), and from KazRosGas LLP – KZT 46 bln (USD 107 mln).

Dividends paid

In May 2021, KMG paid dividends in the amount of KZT 56 bln (USD 131 mln), including dividends paid to Samruk-Kazyna and KZT 50 bln (USD 117 mln) paid to the National Bank of the Republic of Kazakhstan in line with Samruk-Kazyna's resolution dated 4 May.

Dividends received



Statement of financial position

Item	Unit	2021	2020	Change
Assets				
Property, plant and equipment	KZT mln	3 405 980	4 369 745	(963 765)
Long-term bank deposits	KZT mln	56 058	56 528	(470)
Long-term bank deposits	KZT mln	6 550 384	6 471 021	79 363
Other non-current assets	KZT mln	533 303	1 279 570	(746 267)
Short-term bank deposits	KZT mln	510 513	282 472	228 041
Cash and cash equivalents	KZT mln	975 849	1 145 864	(170 015)
Other current assets	KZT mln	1 619 379	1 001 569	617 810
Assets classified as held for sale	KZT mln	795	46 518	(45 723)
Total assets	KZT mln	13 652 261	14 653 287	(1 001 026)
Total assets	USD mln	31 617	34 813	(3 196)
Equity and liabilities				
Total equity	KZT mln	8 158 681	8 636 679	(477 998)
Total equity	USD mln	18 895	20 519	(1 624)
Non-current liabilities				
Non-current borrowings	KZT mln	3 261 347	3 716 892	(455 545)
Other non-current liabilities	KZT mln	859 949	966 341	(106 392)
Current borrowings	KZT mln	484 980	361 556	123 424
Other current liabilities	KZT mln	887 304	971 819	(84 515)
Total liabilities	KZT mln	5 493 580	6 016 608	(523 028)
Total liabilities	USD mln	12 723	14 294	(1 572)
Total equity and liabilities	KZT mln	13 652 261	14 653 287	(1 001 026)
Total equity and liabilities	USD mln	31 617	34 813	(3 196)

Debt management

KMG's gross debt is represented by bonds and loans. The debt portfolio is mainly formed in US dollars – the currency of principal incomes. Accordingly, the "organic" hedging of currency risk is achieved without the need to use derivative financial instruments.

Gross debt

Gross debt[1] as at 31 December 2021 was KZT 3,746 bln (USD 8,676 mln), down 8.1% year-on-year in tenge terms (down 10.5% in US dollars) as a result of deconsolidation of JSC KazTransGas.

Gross debt including guarantees as at 31 December 2021 was KZT 3,748 bln (USD 8,680 mln), down 13.2% year-on-year in tenge (down 15.4% in US dollars).

To reduce the impact of FX risk on the Company's leverage, we entered into a number of deals to refinance loans. During the reporting period, Atyrau Refinery refinanced the following loans denominated in foreign currency:

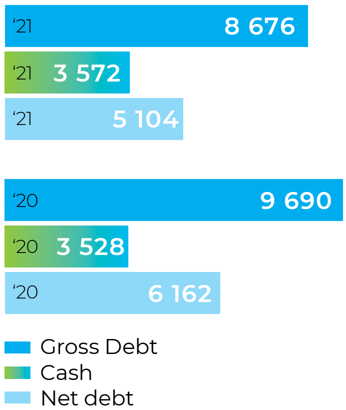
- in January 2021, Atyrau Refinery made a full early repayment of a USD 126 mln loan from JSC Development Bank of Kazakhstan by borrowing KZT 54 bln from JSC Halyk Bank;
- in November 2021, Atyrau Refinery made a provision for a full early repayment of a USD 518 mln loan from The Export-Import Bank of China (Eximbank) in January 2022 by borrowing RUB 38 bln from PJSC VTB;
- in December 2021 Atyrau Refinery made a full early repayment of a USD 119 mln loan from Japan Bank for International Cooperation (JBIC) by borrowing KZT 56 bln from JSC Halyk Bank.

Gross debt after the full early repayment of the loan from the Export-Import Bank of China (Eximbank) in January 2022 amounted to KZT 3,524 bln (USD 8,158 mln).

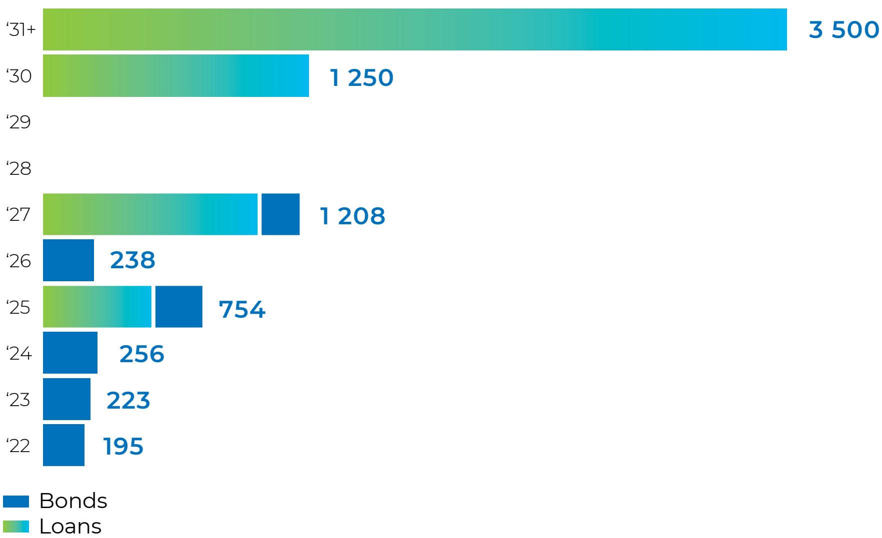
KMG International obtained short-term working capital loans worth USD 50 mln from Cargill and a USD 46 mln loan from Banque de Commerce et de Placements. KMG International also partially repaid a USD 71 mln short-term loan from ING Bank B.V., including the fee.

Net debt

Net debt as at 31 December 2021 was KZT 2,204 bln (USD 5,104 mln), down 15% in tenge terms compared to 31 December 2019.



Debt repayment schedule at par value, USD mln



[1] Excluding guarantees.

ENSURING SUSTAINABLE DEVELOPMENT

KMG’s principles of sustainability management

In its new 2022–2031 Development Strategy, KMG identified sustainability as one of its strategic goals. Thus, all business processes and decision-making must embed sustainability principles.

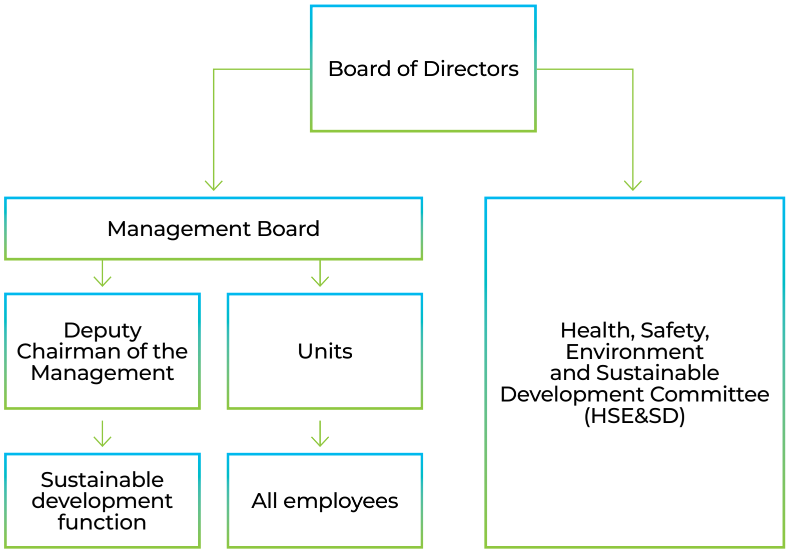
KMG’s sustainability management approaches are based on the following sustainable development principles:

- **disclosure:** we are open for meetings, discussion and dialogue; we are committed to building long-term cooperation with stakeholders based on mutual interests, rights and balance of the interests of the Company and stakeholders;
- **accountability:** we recognise that we are accountable for our impact on the economy, environment and society;
- **transparency:** our decisions and actions should be clear and transparent for stakeholders;
- **ethical behaviour:** our decisions and actions are based on our values such as respect, honesty, disclosure, team spirit, trust, fairness and impartiality;
- **respect:** we respect rights and interests of stakeholders resulting from the law, contracts, or indirectly, through business relationships;
- **rule of law:** our decisions, actions and behaviour comply with the law of Kazakhstan and resolutions of the Company’s bodies;
- **respect for human rights:** we observe and promote human rights as provided by the Constitution of the Republic of Kazakhstan and international documents;
- **intolerance for corruption:** we declare intolerance for any manifestation of corruption in interaction with all stakeholders;
- **unacceptability of conflict of interest:** personal interests of an official or employee should not have effect on unbiased fulfilment of their job duties and functions;
- **personal example:** each of us in our daily actions, behaviour and decision-making promotes the principles of sustainable development; officers and employees in management positions should act as role models in terms of adopting sustainability principles.

Comprehensive approach to ensuring KMG's sustainable development

The Board of Directors of KMG engages in strategic oversight and control over implementation of sustainable development principles. It also approves the Company's annual Sustainability Report.

The Health, Safety, Environment and Sustainable Development Committee (HSE&SD) of the Board of Directors considers and managers sustainability matters, develops recommendations on sustainability policy, annual Sustainability Report, action plans and other internal documents on sustainability that fall within the remit of the Board of Directors, implements ESG aspects of sustainable development, builds a governance system to oversee sustainability, defines sustainability goals and KPIs, monitors KMG's progress in the area of sustainability, and integrates sustainability into KMG's key processes.



The Management Board is responsible for proper execution and implementation of the Company's sustainability principles, policies, standards, and action plan. It also monitors KMG's sustainability activities and progress against goals and KPIs in this area.

Deputy Chairman of the Management Board who is responsible for sustainable development coordinates approaches to achieve goals and KPIs in sustainability initiatives and oversees the implementation of corporate sustainability standards and the preparation of sustainability reports.

The sustainable development unit of KMG's Strategy and Portfolio Management Department is responsible for initiating, coordinating and implementing the sustainable development management system, supporting its integration into the Company's business, providing methodology support in sustainability matters, annual preparation and approval of the Sustainability Report, assisting the Company's units as needed in identifying and managing sustainability risks and in developing a stakeholder map and ways of interaction, as well as trainings in sustainable development.

Units of KMG are responsible for implementing the sustainable development management system, identifying sustainability risks, developing a stakeholder map and ways of interaction, running sustainable development initiatives, and preparing information for the Sustainability Report as per international standards.

All employees of KMG, at their respective level, implement sustainability principles and activities by acting as role models and following respective policies and standards.

List of key documents that govern sustainability in KMG

E

Environmental

- Environmental Policy
- Emissions Management Policy
- KMG's 2022–2031 Low-Carbon Development Programme
- KMG Group's Corporate Water Resources Management Standard
- KMG Group's Corporate Standard for Assessing the Environmental Impact of Planned Activities
- KMG Group's Guidelines on Health, Safety and Environment Management System
- KMG's Crisis Management Regulations
- Quality Manual

S

Social

- HR Policy 2018–2028
- Standard Regulations on the Unified System of Internal Communications
- Standard Rules for Rendering Social Support
- Standard Regulations on Interactions between SACs and Contractors Working on the Sites of JSC NC KazMunayGas
- Golden Rules code for employees
- Occupational Health and Safety Policy
- Policy on Safe Operation of Land Vehicles
- KMG Group's Corporate Standard for Occupational Health
- KMG Group's Corporate Industrial Safety Standard
- KMG Group's Corporate Standard for Building HSE Capabilities
- KMG Group's Regulations on the Application of Korgau Card
- KMG Group's Corporate Standard for Engaging Contractors on HSE
- KMG Group's Corporate Standard for Provision of Workwear, Footwear and Personal Protective Equipment
- KMG Group's Corporate Unified Occupational Health Management System
- KMG Group's Regulations on the Application of Korgau Card
- KMG Group's Regulations on Safe Operation of Land Vehicles

G

Governance

- Corporate Governance Code
- Code of Corporate Social Responsibility
- Sustainable Development Concept
- KMG Group's Sustainability Management Guidelines
- Sustainability Report Development Rules
- Code of Business Ethics
- Anti-Corruption Standards
- Anti-Corruption Policy
- Information Security Policy
- Confidential Informing Policy
- Conflict of Interest Management Policy for Employees and Officers
- Internal Control System Policy
- Corporate Risk Management System Policy
- KMG's Rules for Conducting Anti-Corruption Monitoring and Internal Analysis of Corruption Risks
- KMG's Corporate Regulations for Physical Security and Counter-Terrorism Protection
- Internal Control System Regulations
- KMG's Economic Security Regulations
- Information Security Management System Manual

ESG rankings

KMG's Board of Directors approved a corporate KPI for 2021 – threshold ESG score of 65, up by 5 points compared to the previous target. Also, for the next years, a Corporate KPI of ESG rating was set, which is a clear indicator of the Company's control over, and commitment to sustainability initiatives.

SUSTAINALYTICS
a Morningstar company

ESG risk rating	ESG rating
28,4	72

In October 2021, Sustainalytics raised KMG's ESG rating from 69 to 72. The Company's ESG risk rating was improved from 34.5 to 28.4, moving KMG from the high risk category to the medium risk category and highlighting the Company's strong positions in managing material ESG risks in the international oil and gas market.

KMG's upgrade to the medium risk category is due to the Company's solid progress in sustainability and active efforts to integrate ESG practices into the strategy and operations.

We delivered improvements in our environmental policy, water risk management, programmes on GHG emissions reduction and community development, fatalities among employees, policies and programmes against bribery and corruption, etc.

KMG's key ESG challenges are still carbon emissions from operating activities and emissions from using the Company's products, as well as community relations in our regions of operation.

A major goal for KMG is to solidify its standing as a company with a medium-range ESG Risk Rating by 2031. To that end, the Company has developed and approved an action plan to improve KMG's ESG rating across key sustainability areas: decarbonisation, emissions, wastewater and waste, community management, human capital, and corporate governance.

Particular attention is paid to enhancing the sustainability culture. Sustainability training courses are held on a regular basis for employees of the Corporate Centre and subsidiaries and associates.

Commitment to UN Global Compact principles and 17 Sustainable Development Goals

WE SUPPORT
UN GLOBAL COMPACT

KMG's approach to sustainable development is based on aligning the Company's interests and plans with the basic principles of the UN, universal human values, global trends, and development priorities in Kazakhstan.

KMG reiterates its commitment to all the ten principles of the UN Global Compact.

- **Principle #1.** Businesses should support and respect the protection of the internationally proclaimed human rights.
- **Principle #2.** Businesses should not be complicit in human rights abuses.
- **Principle #3.** Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.
- **Principle #4.** Businesses should eliminate all forms of forced and compulsory labour.
- **Principle #5.** Businesses should uphold the effective abolition of child labour.
- **Principle #6.** Businesses should uphold the elimination of discrimination in respect of employment and occupation.
- **Principle #7.** Businesses should support a precautionary approach to environmental challenges.
- **Principle #8.** Businesses should undertake initiatives to promote greater environmental responsibility.
- **Principle #9.** Businesses should encourage the development and diffusion of environmentally friendly technologies.
- **Principle #10.** Businesses should work against corruption in all its forms, including extortion and bribery.

SUSTAINABLE DEVELOPMENT GOALS

KMG is also committed to all the 17 Sustainable Development Goals (SDGs). Until 2025, the Company has identified six priority SDGs. In 2021 progress can be seen in the list of initiatives incorporated into KMG's operating and day-to-day activities

Implementation of sustainable development goals in KMG

Sustainable Development Goals	Priority targets	KMG's contribution
Ensure healthy lives and promote well-being for all at all ages 3 GOOD HEALTH AND WELL-BEING	3.6. By 2020, halve the number of global deaths and injuries from road traffic accidents	Travel Management project In order to improve transport safety, foster a safe driving culture and establish a single centralised digital platform, the Travel Management pilot project was run at JSC Embamunaigas and is planned to be rolled out across KMG's other subsidiaries and associates starting 2022. Outcome GPS terminals monitor 418 vehicles of JSC Embamunaigas in terms of speed limits, use of safety belts, headlights, and harsh acceleration and braking.
	3.8. Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all	Employee health management KMG will develop a programme to care about the health of its employees and improve the quality of their lives. The programme will have three focus areas: • Measures to tackle the pandemic and its implications. • Prevention of occupational diseases. • Improved employee awareness of, and motivation for, a healthy lifestyle. 10 Steps to Better Health initiative The programme primarily aimed at increasing physical activity and removing unhealthy eating. Outcome 100% of KMG's employees are covered by health insurance and have access to vaccination.
	3.9. By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	The Code of Employees' HSE Leadership and Commitment has been introduced and is being implemented. The Korgau card is in place to identify and report an unsafe condition / unsafe behaviour / unsafe action / hazardous factor. Outcome In 2021, there were zero deaths or illnesses from hazardous chemicals and air, water and soil pollution and contamination. For more details, see the Occupational health and safety section.
Ensure access to affordable, reliable, sustainable and modern energy for all 7 AFFORDABLE AND CLEAN ENERGY	7.1. By 2030, ensure universal access to affordable, reliable and modern energy services	KMG Group's key strategic energy saving and energy efficiency initiatives include process equipment upgrades, deployment of energy saving technologies, optimisation of heat generation and consumption, and the development of the Group's own generation assets, including those relying on renewable energy. The 2031 Low-Carbon Development Programme was approved.
	7.b. By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing states and landlocked developing countries, in accordance with their respective programmes of support	Renewable energy projects: • megawatt class renewable energy projects; • renewable energy projects to be used in the utilities sector; • renewable energy projects to be incorporated into process charts; • procurement of green power. Outcome 2031: • 100% of subsidiaries and associates covered by energy management services; • 10% energy intensity reduction from the 2019 level; • 15% share of renewable energy in KMG's energy consumption; For more details, see the Low-Carbon Development Programme section.

Sustainable Development Goals	Priority targets	KMG's contribution
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.5. By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	**Project to establish KMG Group's Multifunctional Shared Services Centre** The project is designed to increase productivity (cost reduction, customer satisfaction (quality and timing), transparency, manageability, analytics of reliable data) across KMG Group by transferring general support processes from the Group's companies to the shared services centre. This removes routine and overlapping duties from business units to let them focus on core processes with high added value. **Outcome** 2024: functions of 26 KMG Group companies transferred to the SSC.
8 DECENT WORK AND ECONOMIC GROWTH	8.6. By 2020, substantially reduce the proportion of youth not in employment, education or training	**Zhas Orken** KMG Group participates in the Zhas Orken programme of young talent rotation, aimed at providing development opportunities to talented youth in Kazakhstan. **Outcome** 17 project participants took apprenticeship at KMG Group companies under the Zhas Orken programme in 2021.
	8.8. Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	**Standard Rules for Rendering Social Support** Social support for employees of KMG subsidiaries and associates is set out in their collective bargaining agreements and the Rules for Rendering Social Support. To unify the types and standards of social support across all KMG Group companies, the Standard Rules for Rendering Social Support to Employees of KMG Subsidiaries and Associates were adopted. For more details, see the Personnel development section.
Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	9.1. Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	KMG's digital transformation programme promotes the expansion of scientific research and development of technological capabilities across industrial sectors. KMG invests significant funds in relevant scientific research and local capacity building. The development of domestic technological capacities to ensure industrial diversification will also have a positive impact on the climate situation in the country. **Project "Development of the ABAI Information System"** Under the project, all production data of KMG Group will be centralised in a single Big Data database and will be processed and analysed using AI and machine learning. The ABAI information system will comprise 20 standalone modules, each designed to tackle specific operating issues. **Outcome** Five pilot modules of ABAI developed and tested: • ABAI Database, • Visualisation Centre, • Complications Monitoring, • Technological Mode, • Selection of Downhole Pumping Equipment. For more details, see the Digitalisation and Transformation section
	9.4. By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	The Low-Carbon Development Programme until 2031 was approved **Outcome** 2031: • 100% of subsidiaries and associates covered by energy management services; • 10% energy intensity reduction from the 2019 level. For more details, see the Low-Carbon Development section.

Sustainable Development Goals	Priority targets	KMG's contribution
Take urgent action to combat climate change and its impacts 13 CLIMATE ACTION	13.2. Integrate climate change measures into national policies, strategies and planning	**Low-Carbon Development** A project office for low-carbon development has been set up. There are also plans to establish a competence centre for hydrogen energy and carbon capture, storage and processing. **Green Office** Company-wide green initiatives are being actively promoted, and the Green Office principles, including the introduction of separate waste collection, water and energy saving in the office, etc., are being gradually implemented. **Outcome** By 2031: • 15% reduction in greenhouse gas emissions from the 2019 level; • 10% carbon intensity reduction from the 2019 level; • zero routine flaring of raw gas.
	13.3. Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	**Emissions Management Policy** KMG Group's Emissions Management Policy has been approved. The Policy is aimed at complete elimination of routine flaring and is comprised of eight key principles, six of which directly address climate change. **CDP** The Company calculates its carbon footprint and posts its Climate Questionnaire on the website of the CDP (previously Carbon Disclosure Project). **Task Force on Climate-related Financial Disclosures (TCFD)** Disclosure of climate-related risks in line with TCFD recommendations. **Outcome** • Environmental Policy approved. • CDP score C assigned to KMG. For more details, see the Industrial safety, occupational health and environmental protectionsection.
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss 15 LIFE ON LAND	15.3. By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	KMG implements projects and initiatives aimed at curbing discharges and reducing fresh water withdrawal from natural sources: **CDP** The Company calculates its water footprint and posts its Water Security Questionnaire on the website of the CDP. **TAZALYQ** Atyrau Refinery is heavily focused on TAZALYQ, a large-scale project designed to improve the environment in the city of Atyrau. **Construction of desalination plants** A formation water desalination plant is a unique project to address the water supply issue in the Mangystau Region. The plant will free up at least 6.2 mln m^3 of Volga River water annually to help develop the region. A desalination plant near the Kenderly recreational zone, Mangystau Region. Its planned capacity is 50,000 m^3 per day. **Land remediation** The Company works to ensure recovery of historical oil wastes and oil-contaminated soil treatment. **Outcome** TAZALYQ: 10% reduction in water intake from the Ural River, reuse of 15% of the factory's treated plant effluents. 2024: Complete elimination of historical oil waste and treatment and remediation of the Company's oil-contaminated territories
	15.5. Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	**Forest-climate projects** As part of KMG's Low-Carbon Development Programme until 2031, forest-climate projects are expected to be implemented, delivering benefits for terrestrial ecosystems. Tree planting has started at JSC Embamunaigas and Atyrau Refinery. **Mitigation hierarchy to manage biodiversity risks** In its planning and operations, the Company relies on mitigation hierarchy to manage biodiversity risks, with four key steps in place: avoidance, minimisation, rehabilitation/restoration, and offset. **Outcome** 2031: Forest-climate projects implemented across 2,000 ha.

KMG prepares an annual Sustainability Report in line with GRI standards. KMG's 2021 Sustainability Report will be availbale on the Company's website at https://www.kmg.kz/eng/ustoichivoe_razvitie/reports/.

The Company's annual Sustainability Report also serves as Communication on Progress for the UN Global Compact: https://www.unglobalcompact.org/what-is-gc/participants/6810.

Sustainable development KPIs of KMG's management

To implement strategic sustainability targets for 2021, the following motivational KPIs were approved for the Chairman of the Management Board (corporate KPIs) related to the introduction of the sustainable development management system:

- Implementation of investments projects, including the Tazalyq sustainability project and the construction of a desalination plant in Kenderly
- ESG rating

For 2022, motivational KPIs of the Chairman of the Management Board (corporate KPIs) related to sustainability are more ambitious than those set for 2021:

- Implementation of investment projects, including those which focus on sustainability
- ESG Risk Rating: 28.2
- 5% reduction in Lost Time Incident Rate (LTIR)

For Deputy Chairmen of the Management Board, the following functional KPIs are planned for 2022:

- Development and approval of an Action Plan to implement KMG's Low-Carbon Development Programme for 2022–2031.
- Development of an Action Plan in a respective business direction to implement KMG's Low-Carbon Development Programme for 2022–2031.
- Implementation of investment projects involving sustainability aspects:
  - Construction of a new gas processing plant in Zhanaozen,
  - Upgrade and expansion of the Astrakhan–Mangyshlak water pipeline (Phase 1),
  - Construction of a desalination plant in Kenderly with a daily capacity of 50,000 m^3,
  - Tazalyq.

Low-Carbon Development Programme

Today, decarbonisation of industry as part of climate change mitigation has solid positions on global political, investment and trade agenda.

Reducing the carbon footprint is the critical factor in fighting global warming.

The sustainability and long-term horizon of decarbonisation is set forth by the Paris Agreement on climate change, which sets a global goal to hold temperature increase to 1.5°C by 2100 and achieve a reduction of CO_2 emissions of 25% by 2030, 70% by 2050, and 100% by 2070 (full decarbonisation).

Kazakhstan in turn supports international initiatives to step up efforts and enhance ambitions towards achieving the Paris Agreement goals, taking on voluntary commitment to have greenhouse gas emissions reduced by 15% by 2030 from the 1990 level.

Last November, President of the Republic of Kazakhstan Kassym-Jomart Tokayev spoke at a climate change conference and announced that Kazakhstan is ready to take action on climate change and achieve carbon neutrality by 2060. To this end, a Doctrine for Carbon Neutrality of the Republic of Kazakhstan is being developed to achieve carbon neutrality by 2060.

KMG developed a Low-Carbon Development Programme for 2022–2031 as a single low-carbon development agenda that streamlines the Company's efforts in the realm of carbon footprint reduction.

The document primarily aims to formulate the climate ambitions of KMG, structure key carbon footprint reduction approaches and initiatives through the analysis of the existing potential, define main directions for development and increase the Company's preparedness.

The Programme comprises five key sections (carbon policies and key trends; KMG's GHG emission inventory; scenario modelling; strategic areas of the Programme; implementation mechanism). 2019 was set as the baseline year.

To understand the current situation and identify a pathway to be taken, the Programme takes a deep dive into the Company's greenhouse gas emissions.

The exercise covered direct (Scope 1)[1] and indirect (Scope 2) emissions.

- Scope 1 includes GHG emissions associated with the flaring of hydrocarbon fuels and unavoidable fugitive emissions in production processes at sources owned by KMG;
- Scope 2 emissions are associated with the consumption of electricity, heat, hot water and steam supplied from outside.

The inventory data was used for scenario modelling of KMG's development. The model included three scenarios: business-as-usual, green development, and low-carbon development.

According to the modelling results, under the business-as-usual scenario, KMG's subsidiaries and affiliates will vary in terms of their GHG emissions until 2030, with the total increase in GHG emissions across all assets standing at nearly 4% versus 2019.

[1] For the purposes of this Programme, direct emissions include only CO_2.

Under the green scenario, GHG emissions are expected to go down assuming the operating structure of assets stays unchanged and measures are put in place to achieve energy efficiency, enable conversion to electric heating, and switch to renewable energy sources.

Under the low-carbon development scenario, the above measures are enhanced with projects to actively develop hydrogen energy, projects on carbon capture and storage, and robust offset policy (climate projects).

The most promising scenario until 2031 is the green development scenario with a focus on energy efficiency and renewable energy.

At the same time the Company is to pilot other high-potential options to enhance competencies and build capacity before scaling up once the external conditions are favourable.

As part of the green development scenario, an achievable goal for KMG is to reduce carbon dioxide emissions by 15% or 6 mln tonnes of CO_2 by 2031 vs 2019.

KMG takes a responsible approach to the Programme and has established a project office to run it effectively, as well as recruited professionals with relevant expertise and experience. To oversee the progress and highlight the Programme's importance for KMG, each top manager of the Company and its subsidiaries and associates have KPIs set for them that are linked to low-carbon development indicators.

Also, in the first year after the Programme's adoption, the following measures were approved and put in place:

- The Competence Centre for hydrogen energy was set up at KMG International to focus on applied research in potential use of blue and green hydrogen.
- KMG signed a memorandum with Eni on joint hybrid projects that combine the use of renewable energy and gas, hydrogen energy projects, and bioethanol projects.
- KMG signed a memorandum with TotalEnergies on joint implementation of large-scale renewable energy projects.
- A memorandum was signed with Shell on potential cooperation in the area of carbon capture and storage.
- A memorandum was signed between KMG, Atyrau Refinery and Air Liquide Munay Tech Gases LLP on a pilot project in hydrogen mobility.
- Proposals were submitted to amend national legislation with a view to supporting renewable energy (regulation of small-scale renewable generation and bilateral contracts on renewable energy).

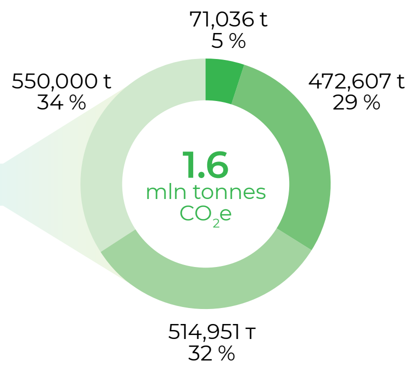
In addition to the core activities included into the Programme, KMG developed further decarbonisation measures that may play a major role in the Company's long-term strategy for low-carbon development. These include:

- carbon capture, utilisation and storage (CCUS) projects;
- hydrogen energy;
- forest-climate projects.

Target

- KMG's baseline emissions (2019)
- Emissions reduction
- KMG's target emissions (2031)

Key areas



- Midstream energy efficiency
- Upstream energy efficiency
- Downstream energy efficiency
- Renewable energy projects

Additional measures

I. Hydrogen energy:

- establishing a Centre of Competence for hydrogen energy to build KMG's capacity
- pilot project on hydrogen mobility at Atyrau Refinery

II. Carbon capture, storage and utilisation (CCUS) technologies:
Pilot project at JSC Embamunaigas with a capture potential of around 20,000 tonnes of CO_2 annually

III. Forest-climate projects:
2,000 ha (10–16,000 tonnes of CO_2e annually)

IV. Routine flaring:
29,800 tonnes of CO_2e

V. Implementation of the Programme for Quantification, Control, Detection and Repair of Methane Leaks (LDAR)

Targets:

KMG's strategic focuses in carbon footprint reduction

№	Indicator	Baseline year indicator (2019)	Target indicator (2031)
Key indicator			
1.	Reduction of direct and indirect CO_2 emissions	10.7 mln tonnes of CO_2e[1]	–15 % (1.6 mln tonnes of CO_2e[2])
Targets			
2.	Reduction of carbon intensity:		–10 %
	• Hydrocarbon production	147.6 tonnes of CO_2e / ths toe of produced hydrocarbons	132.9 tonnes of CO_2e / ths toe of produced hydrocarbons
	• Large refineries	330.3 tonnes of CO_2e / ths tonnes of oil	297.3 tonnes of CO_2e / ths tonnes of oil
	• Bitumen production	54.4 tonnes of CO_2e / ths tonnes of oil	49 tonnes of CO_2e / ths tonnes of oil
	• Gas processing	1.1 tonnes of CO_2e / ths m^3 of gas	1 tonne of CO_2e / ths m^3 of gas
	• Transportation	9.3 tonnes of CO_2e / ths tonnes of oil	8.3 tonnes of CO_2e / ths tonnes of oil
3.	Reduction of carbon intensity		–10 %
	• Hydrocarbon production	2,281.3 MJ / ths toe of produced hydrocarbons	2,053.2 MJ / ths toe of produced hydrocarbons
	• Large refineries	3,732.4 MJ / tonne of oil	3,359.2 MJ / tonne of oil
	• Bitumen production	650.1 MJ / tonne of oil	585.1 MJ / tonne of oil
	• Gas processing	3,296.5 MJ / ths m^3 of gas	2,966.7 MJ / ths m^3 of gas
	• Transportation	120.9 MJ / tonne of oil	108.9 MJ / tonne of oil
4.	Share of renewable energy in KMG's electricity balance from the baseline	0.005% (211 MWh)	15 % (600 000 MWh)
5.	Routine flaring	0.43 %	0 % (29,800 tonnes of CO_2e)
6.	Implementation of the Programme for Quantification, Control, Detection and Repair of Methane Leaks (LDAR)	0 %	100 % coverage of subsidiaries and associates engaged in production
7.	Forest-climate projects	0	2,000 ha (10–16,000 tonnes of CO_2e annually)
8.	Introduction of the energy management service	Partial coverage of subsidiaries and associates	100% coverage of subsidiaries and associates
9.	Carbon Disclosure Project climate rating	C (knowledge of climate impacts and issues)	A/A– (implementing current best practices)
10.	Annual allocation of funds for implementation of low-carbon projects	0	At least 10% of CAPEX (USD 130–150 mln)

[1] Baseline year emissions include CO_2 emissions from KMG's overseas operating assets.
[2] For the purposes of this programme, Scope 1 and Scope 2 emissions are included, with only CO_2 included in direct emissions.

Health, Safety, and Environment (HSE)

Industrial safety, occupational health and environmental protection

To ensure compliance with the new environmental requirements and global trends, the Company declared 2021 the Year of the Environment. KMG is committed to the sustainable development principles and recognises its responsibility for environmental and social stability in the regions where it operates.

The sustainable development principles have an impact on the economic, environmental, and social development of the Company. One of the key ESG challenges for KMG is carbon emissions from operations and emissions from the use of the Company's products.

In accordance with the 2016 Paris Agreement, Kazakhstan entered into voluntary unconditional commitments to reduce greenhouse gas emissions by 15% by 2030 as compared to 1990. The President of the Republic of Kazakhstan stated that Kazakhstan would reach carbon neutrality by 2060. In 2021, the Company developed a low-carbon development programme that complies with the laws of the Republic of Kazakhstan and KMG's internal documents. The transition to "carbon neutrality" is an integral component of corporate governance. It systematises the Company's efforts to reduce carbon footprint. KMG Group's Emissions Management Policy has been approved. The Policy is aimed at complete elimination of routine flaring and is comprised of eight key principles, six of which directly address climate change. Reducing greenhouse gas emissions is an important component of one of our strategic goals.

Participation in initiatives and programmes

WORLD BANK GROUP
The World Bank's Zero Routine Flaring by 2030 initiative

SUSTAINABLE DEVELOPMENT GOALS
UN 17 Sustainable Development Goals initiative

CDP
CDP climate programme

Global Methane Initiative

Caspian Environmental Protection Initiative – CEPI

Performance highlights

Social highlights

Indicator	2019	2020	2021
Lost-Time Incident Rate (LTIR)	0.34	0.29	**0.31**
Fatal Accident Rate (FAR)	1.48	0.00	**2.93**
Fatalities	2	0	**1**

Environmental highlights

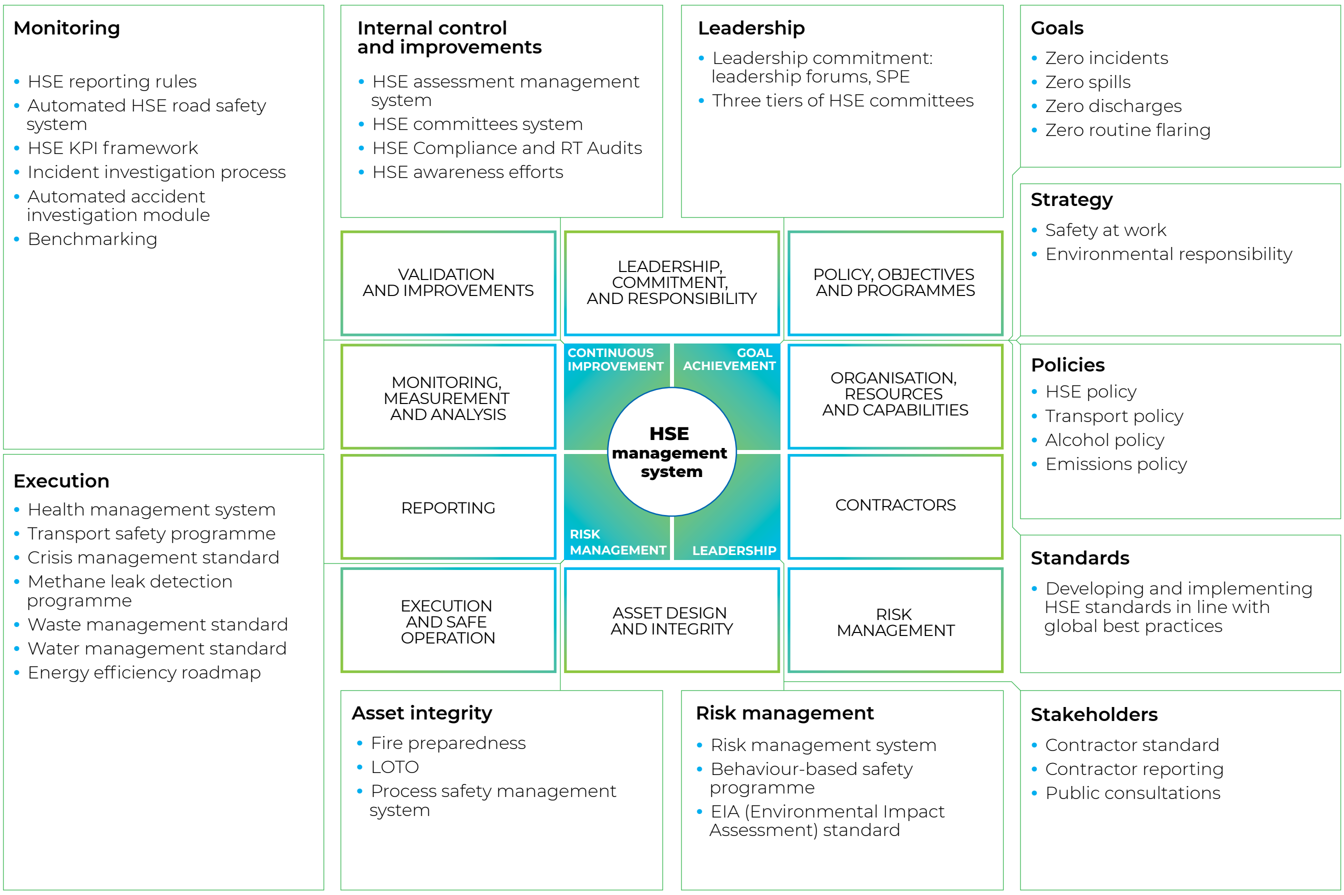
Indicator	2019	2020	2021
NO_X emissions, tonnes per 1,000 tonnes of produced hydrocarbons	0.21	0.22	**0.24**
SO_X emissions, tonnes per 1,000 tonnes of produced hydrocarbons	0.20	0.23	**0.22**
APG flaring rate, tonnes per 1,000 tonnes of produced hydrocarbons	2.95	2.2	**2.1**

Health, safety and environment management system (HSE MS)

The health, safety and environment management system is designed to Kazakhstan's statutory requirements, ISO 14001 and ISO 45001 international industry standards, global best practices and guidelines, and recommendations of the International Association of Oil & Gas Producers (IOGP). It covers ten areas and relies on four pillars: leadership, goal achievement, risk management, and continuous improvement.

Since 2006, KMG operates an integrated quality, environmental, and occupational health and safety management system compliant with ISO 9001, ISO 14001, and ISO 45001. KMG's significant energy users are certified to ISO 50001. The effectiveness of HSE MS is verified by independent auditors on a regular basis.

To improve its management system, KMG has its HSE MS certified to ISO 45001.



Environmental responsibility and safety

2021 highlights

Emissions intensity SO_x
0.22
(IOGP: 0.19)

Emissions intensity NO_x
0.24
(IOGP: 0.29)

CDP score:
«C»

CDP water security score
«B–»

Associated petroleum gas (APG) flaring rate
2.1
(IOGP: 8.0)

APG utilisation rate
98 %

Recovery of historical waste and remediation of oil-contaminated soils
540.5
THOUSAND TONNES
(558,400 tonnes in 2020)

Increase in energy consumption (from the 2020 baseline):
6 %

KMG Group's goals in HSE management are directly related to its Development Strategy. KMG's Development Strategy until 2031 (the Strategy) covers strategic initiatives to promote greater environmental responsibility. KMG Group's environmental priorities include management of greenhouse gas emissions, water resources and production waste, flaring reduction, and land reclamation.

Management teams at JSC NC KazMunayGas and its subsidiaries and associates take a zero tolerance approach to losses and harm caused by environmental pollution. In accordance with the new Environmental Code, KMG's Environmental Policy was updated in 2021 to ensure the collection, accumulation, storage, analysis, and dissemination of environmental information. In addition, KazMunayGas enhanced its commitment to the sustainable use of natural resources and compliance with biodiversity conservation measures.

In an effort to minimise raw gas flaring, in 2015 the Company supported the World Bank's initiative Zero Routine Flaring by 2030. In reducing our GHG footprint, we focus on increasing associated petroleum gas utilisation and recovery while minimising flaring. Raw gas flaring reports under the Initiative are submitted on an annual basis to the World Bank's representative office in Kazakhstan.

As a result of its efforts to improve environmental performance and ensure openness and transparency in that area, KMG has topped, for the fifth consecutive year, the Environmental Transparency Rating of Oil and Gas Companies in Kazakhstan compiled by independent experts from the World Wildlife Fund (WWF), Creon Group, and AKRA rating agency.

Environmental performance indicators, tonnes per 1,000 toe of produced hydrocarbons

Year	2017	2018	2019	2020	2021
SO_x emissions intensity	0.32	0.25	0.20	0.23	0.22
NO_x emissions intensity	0.25	0.20	0.21	0.22	0.24
Raw gas flaring rate	11	6	2.95	2.2	2.1
Raw gas utilisation, %	85	93	97	98	98

The Company remains committed to being an environmentally responsible business, further enhancing its environmental protection management system, maintaining dialogue with all stakeholders on this matter, and thus delivering on its commitments as stated in the Company's Environmental Policy.

KMG is aware of the importance of its environmental impact and strives to minimise it.

As part of the Year of the Environment, a number of activities were implemented to ensure environmental safety, such as working to dispose of historical oil waste and decontaminate oil-contaminated soils. Efforts were stepped up to promote environmental protection issues among employees, participation in tree planting events, development of action plans to reduce atmospheric emissions, implementation of environmental protection programmes, and other activities.

The World Cleanup Day 2021 was held on 17 September 2021 in 180 countries across the world. As part of that global movement and the republican eco-initiative "Birge-taza Kazakhstan!" (Together – Clean Kazakhstan!), as well as the Year of the Environment, KMG organised a Tree Planting Event jointly with the Almaty District Akimat of Nur-Sultan. The Company's employees planted about 100 pine trees in the capital during the city-wide clean-up day on 18 September.

The commitment to environmental responsibility is also reflected in the tree planting carried out by KMG's subsidiaries and associates. As part of the efforts to carry out the commission of Kassym-Jomart Tokayev, the President of Kazakhstan, concerning the planting of over 2 billion trees in the forest area and 15 million trees in settlements, as announced in the Address to the People of Kazakhstan, and to fulfil the Comphrehensive

Action Plan, provisions are also made for KMG's subsidiaries and associates located in the Atyrau Region to carry out activities in 2021–2024 as part of the Tree Planting by Major Oil Companies programme. All of KMG's subsidiaries and associates are working to plant trees and shrubs in sanitary protection zones and in the regions of their footprint. For example, employees of JSC Karazhanbasmunai cleaned up and planted 3,000 seedlings at the Karazhanbas field and at a number of socially significant facilities in the Mangystau Region. Pavlodar Refineries planted 6,680 trees in a sanitary protection zone on an area of 21.5 hectares. The company's employees planted 84 trees on the industrial site.

In April 2021, the Akimat of the Atyrau Region and JSC Embamunaigas signed a Memorandum on Tree Planting in the Atyrau Region with a total area of 243.2 hectares. As part of the tree planting programme, arrangements were made to implement the initiative "Soil Survey on the Allocated Land Plot". Based on the results of the soil survey efforts and identification of suitable areas for planting, it is planned to carry out tree planting work in the area.

Atyrau Refinery LLP received land plots in Atyrau, with a total area of 1,420.9 hectares, including 860.9 hectares in the Tukhlaya Balka evaporation field, under the Memorandum on Tree Planting in the Atyrau Region signed in April 2021 with the Akimat of the Atyrau Region.

Priority environmental projects

Project: TAZALYQ

The TAZALYQ project provides for the upgrading of Atyrau Refinery's wastewater treatment facilities as well as the reclamation of the Tukhlaya Balka evaporation fields.

Project: Construction of a formation water treatment plant at the Karazhanbas field

The construction of a formation water treatment plant at the Karazhanbas field will solve the water shortage problem at the field.

Project: Automated environmental monitoring information system

It is used at the stage of generation and submission of numerous environmental reports, as well as planning of environmental protection efforts.

The objective is to obtain accurate and reliable data and generate complete and up-to-date environmental information required for implementing an effective environmental policy and putting together development programmes.

Recovery of historical oil wastes and oil-contaminated soil treatment

Complete disposal of historical oil waste and oil-contaminated soil treatment through 2024.

To fulfil the terms of the Memorandum, a research company with expertise in forest cultivation was engaged to work on an area of 560 hectares. Based on the results of the survey, no greenery will be planted on the allotted plot, with efforts being taken to identify a new one. Once an additional land plot is identified for planting, the factory will develop a land improvement and planting project, determine the estimated cost and the scope of work, and put together a schedule of work.

Atyrau Refinery LLP carried out additional land improvement and tree planting work on a 5 hectares land plot located in a sanitary protection zone (SPZ) to the west of the refinery (which is not included in the approved draft substantiation document for the SPZ in terms of tree planting).

Employee training in environmental management

People are our most important asset, so HSE training remains top of mind for KMG Group. Therefore, mandatory staff education, training and upskilling in occupational health, industrial and fire safety and environmental protection are priority training areas for KMG.

Since 2021, mandatory training sessions for KMG CC employees in occupational health and industrial and fire safety basics have been held on the platform of KMG Engineering LLP.

In 2021, KMG Group spent a total of KZT 498,714,000 to train 61,678 employees, including HSE training in the following key business segments: KZT 215,745,000 in the upstream business; KZT 78,409,000 in the midstream business; KZT 98,495,000 in the downstream business; KZT 106,065,000 in the service business; and KZT 0 in the KMG Corporate Centre.

The training in occupational health, safety, and environmental protection issues is carried out in accordance with the “70/20/10” / “on-the-job / internal / external” training model using our own existing training facilities / centres. Mentoring and internal coaching programmes are implemented for long-service employees, with master classes and trainings conducted as well as various contests to recognise best performers, which enhances internal communications and motivates personnel to strive to excel in their jobs.

The companies that have their own training facilities / centres include JSC Ozenmunaigas (Zhanaozen), JSC KazTransOil (Aktau), Pavlodar Refinery LLP (Pavlodar), and Oil Services Company LLP (Aktau).

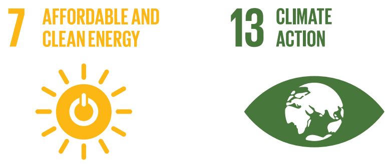
Employee training expenses

Indicator	2019	2020	2021
Employees trained	116,890	89,715	61,678
Amount in KZT ’000	1,056,067	578,891	498,714

HSE training by key business segment

Business segment	Number of employees	Amount in KZT ’000
Upstream	31,068	215,745
Midstream	2,024	78,409
Downstream	12,046	98,495
Service	16,496	106,065
KMG Corporate Centre	44	-

Energy saving and energy efficiency programmes



KMG has continued its group-wide energy saving and energy efficiency programme, with the KMG Corporate Centre collecting and analysing energy consumption and energy efficiency-related data, monitoring the dynamics, identifying opportunities for improvement, and conducting year-on-year and peer benchmarking (IOGP).

KMG's energy saving and energy efficiency efforts are based on the methodology set out in ISO 50001 Energy management systems, an internationally recognised best-practice framework for systemic energy management.

Energy saving and energy efficiency programme performance

In 2021, total energy consumption amounted to 166.4 mln GJ, up 6% year-on-year, including 13.1 mln GJ in electricity, 4.3 mln GJ in heat, 1.4 mln GJ in motor fuel, and 147.7 mln GJ in boiler and heating fuel (with natural gas accounting for 45% of the total energy consumption). The total energy consumption is divided among three business segments: Upstream, Midstream, and Downstream.

The year-on-year energy consumption increase was mainly due to higher gas transportation in 2021 driven by the stabilisation of the pandemic situation.

In 2021, KMG Group's self-generated energy amounted to 547.1 mln kWh in electricity and 4,108 ths Gcal in heat.

The use of innovative technologies and renewable energy sources is a relatively new yet promising trend in the oil and gas industry.

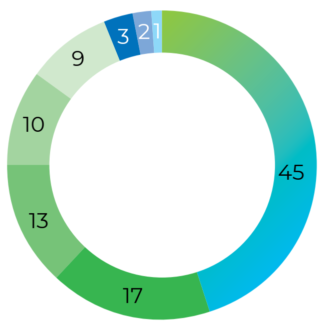
Energy intensity

In 2021, KMG Group's energy consumption in the upstream sector averaged at 2.4 GJ per tonne of hydrocarbon production, still 58% above the International Association of Oil & Gas Producers (IOGP) average for 2020, i.e. 1.4 GJ per tonne of hydrocarbon production. In oil production, specific energy consumption increase was primarily due to a higher water cut at mature fields, which caused a higher density of the fluid produced and, accordingly, a higher energy consumption for artificial lift.

KMG Group's key strategic energy saving and energy efficiency initiatives include process equipment upgrades, deployment of energy saving technologies, optimisation of heat generation and consumption, and the development of the Group's own generation assets, including APG-fired generation.

In 2021, 49 energy saving and energy efficiency initiatives were implemented. The target annual fuel and energy

Energy consumption by fuel type, %



- Natural gas
- APG
- Boiler and heating fuel
- Stripped gas
- Electricity
- Heat
- Fuel oil
- Motor fuel

We benefited from a range of renewable energy sources deployed by JSC NC QazaqGaz, with the total renewable energy generation in 2021 broken down by source as follows:

- Geothermal energy (heat) generation by heat pumps totalled 678.54 Gcal in 2021. Waterkotte geothermal heat pumps for heating and hot water supply (HWS) are operated by JSC Intergas Central Asia.
- Electricity generation by solar panels for KTG Group totalled 109,068 kWh.
- Electricity generation by solar panels for the lighting of the territory of the Engineering and Technical Centre of JSC ICA totalled 7,776 kWh.
- Electricity generation by the solar panels installed on the pig launchers for the gas pipeline branches at the Terenuzyak and Zhosaly automated gas distribution stations of the Kyzylorda UMG (Main Gas Pipeline Administration) amounted to 5,092 kWh.
- Electricity generation by the solar panels installed at the block valve stations for the linear portion of the Kazakhstan – China gas pipeline was 96,200 kWh.
- In 2021, PKOP solar panels and autonomous street lamps (combined solar and wind generators) generated 47,000 kWh and 3,000 kWh of electricity for street lighting in the area respectively.

savings amounted to 0.34 mln GJ, which in physical terms corresponds to 5.3 mln kWh of electricity and 8,107,000 m^3 of natural gas.

Given the country's ambitions and expectations, KMG plans to acquire a stake in the existing alternative energy assets (wind and solar power plant projects) or build new renewable energy power plants of at least 300 MW in capacity, which will be approximately 945 mln kWh of "green" energy production by 2031.

Climate change and greenhouse gas emissions

Management

KMG's long-term Development Strategy prioritises the following climate-related initiatives:

1. greenhouse gas emissions management
2. reduction of routine flaring
3. improvement of GHG emissions intensity per unit of production and overall energy efficiency
4. reduction of methane leaks
5. increased financing for green projects.

The global trend to fight climate change is increasingly affecting companies across the world.

In furtherance of the government policy on the low-carbon development of the country, KMG has approved its 2022–2031 Development Strategy, which meets high safety standards and the sustainable development principles. According to KMG's Development Strategy, low-carbon development to reduce the carbon footprint is one of the Company's key priorities.

Because the climate agenda is strategically important, the Company has developed a Low-Carbon Development Programme for 2022–2031 (the "LCDP" or the "Programme") which defines KMG's climate ambitions, key approaches, and measures to reduce the carbon footprint. In striving for low-carbon production, KMG pursues a balanced approach, targeting a 15% reduction in direct and indirect CO_2 emissions by 2031 from the 2019 level of 1.6 mln tonnes of CO_2.

In addition to the Programme's main focus on improving the energy efficiency of the operating processes and implementing renewable energy projects, the Company is also planning to implement additional decarbonisation measures, specifically: carbon capture, utilisation and storage (CCUS) projects, development of hydrogen energy, and implementation of forest-climate projects.

Risks and opportunities

The corporate risk management system is a key component of the corporate governance system, and is used to identify, evaluate, monitor and mitigate potential risks that may hinder the achievement of strategic goals. The Company implements a range of initiatives to minimise such risks, with risk reports submitted to the Board of Directors on a quarterly basis.

Information disclosure

As part of the CDP, KMG discloses direct and indirect greenhouse gas emissions data, greenhouse gas management issues, and key risks and opportunities for all KMG assets, including international assets in Romania and Georgia, starting from 2019.

In July 2021, the KMG Climate Change 2020 Questionnaire was published. According to the report, the direct carbon dioxide emissions at KMG Group's level totalled 8.7 mln tonnes in 2020 (9.7 mln tonnes in 2019). The CO_2 equivalent data are presented using the global warming potential set out in the IPCC Fifth Assessment report (28 for methane and 256 for nitrous oxide).

The greenhouse gas emissions data were verified by an independent accredited organisation's report for each subsidiary or associate. Data for 2021 will be disclosed in KMG's CDP report to be published in Q3 2022. We seek to ensure consistency and comparability when preparing our disclosures. We are committed to enhancing disclosures and increasing the scope of reporting around our Scope 3 emissions.

For more details on air protection, see the Sustainability Report.

Efficient use of raw gas

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

The management of greenhouse gas emissions and the reduction of gas flaring are among the priority tasks for KMG Group. According to the approved Environmental Policy, the Company strives to achieve zero routine gas flaring and reduce atmospheric emissions from flares. In reducing our GHG footprint, we focus on increasing raw gas utilisation and recovery while minimising flaring. The measures taken so far within our raw gas processing and development programmes have increased internal gas use for heat and electricity generation.

In 2021, raw gas utilisation rate was 98%, with flaring at 2.1 tonnes per 1,000 tonnes of produced hydrocarbons (2.2 tonnes in 2020 and 2.95 tonnes in 2019), down 5% year-on-year and 74% lower than the IOGP industry average.

In 2015, KMG supported the World Bank's Zero Routine Flaring by 2030 initiative. KMG strives to minimise raw gas flaring. Raw gas flaring reports under the Initiative are submitted on an annual basis to the World Bank's representative office in Kazakhstan.

For more details, see KMG's Sustainability Report.

Raw gas flaring

Indicator	2017	2018	2019	2020	2021
Total raw gas flaring, mln m³	315.8	148.9	80.2	57.6	52.5
Raw gas utilisation,%	85	93	97	98	98
Raw gas flaring rate, tonnes per 1,000 tonnes of produced hydrocarbons	11	6	2.95	2.2	2.1

Waste management

15 LIFE ON LAND

KMG's production operations generate production and consumption waste. KMG Group develops and implements a set of measures to improve the waste management system, keeps records of waste generated and accumulated, including contractors' waste, and performs the safe accumulation of waste until it is recovered or disposed of. In 2021, KMG's expenses for the recovery of waste generated and accumulated totalled KZT 12.9 bln.

It is important to emphasise that in selecting waste recovery methods, priority is given to modern waste recovery technologies, including those that cause no secondary pollution of the environment.

On 6 August 2019, a Memorandum of Cooperation was signed by and between the Ministry of Ecology, Geology, and Natural Resources of the Republic of Kazakhstan and KMG with historical oily waste disposal and oil contaminated soil remediation commitments until 2024, inclusively. The memorandum covers Mangistaumunaigaz, OzenMunaiGas, and Karazhanbasmunai.

Starting September 2019, inventories of contract lands were conducted to determine waste characteristics, the content of oil products in the waste, and the waste volume. On the basis of the inventories made, the relevant remediation projects for oil-contaminated soil were developed and agreed upon with the government authorities, with safe and efficient technologies for oily waste disposal selected and recommended and schedules drawn up for oil-contaminated soil remediation through the year 2024, inclusively.

In addition, although Embamunaigas and Kazakhturkmunay are not covered by the commitments under the Memorandum, they work to eliminate historical pollution too.

All of the above companies have entered into long-term contracts with organisations specialising in the disposal of historical oily waste and clean-up of oil-contaminated soil.

In 2021, a total of 540,475 tonnes of historical waste was disposed of at KMG subsidiaries' and associates' facilities, with their disposal sites remediated.

KazTransOil completely reclaimed historically polluted lands in sections 984–985 km of the Uzen-Atyrau-Samara oil pipeline.

The total area of reclamation of historically oil-contaminated lands for the KMG group of companies is 48 hectares.

For more details, see KMG's Sustainability Report.

Asset retirement obligations

Oil and gas assets

Under the terms of certain contracts, in accordance with legislation and regulatory legal acts, KMG has legal obligations to dismantle and liquidate fixed assets and restore land plots at each of the fields. In particular, KMG's obligations include the gradual closure of all non-productive wells and actions to permanently terminate operations, such as dismantling pipelines, buildings and reclamation of the contract area, as well as decommissioning and preventing environmental pollution obligations at the production site.

The Company calculates asset retirement obligations separately for each contract. The amount of the liability is the present value of the estimated costs that are expected to be required to settle the liability, adjusted for the expected inflation rate and discounted using average long-term risk-free interest rates on government debt of transition economies, adjusted for risks inherent in the Kazakhstan market.

As of 31 December 2021, the carrying amount of the Company's provision for liabilities to liquidate oil and gas assets was KZT 67 bln (31 December 2020: KZT 66 bln) (details in the consolidated financial statements in Note 4).

Trunk oil and gas pipelines

In accordance with the Law of the Republic of Kazakhstan "On Trunk Pipeline", which entered into force on 4 July 2012, two subsidiaries of KMG, JSC KazTransOil and JSC Intergas Central Asia, which is a subsidiary of JSC KazTransGas, have a legal obligation to liquidate the main pipeline after the end of operation and the subsequent implementation of measures to restore the environment, including land reclamation. The provision for the obligation to abandon pipelines and land reclamation is estimated based on the cost of dismantling and reclamation works calculated by KMG. As of 31 December 2021, the carrying amount of KMG Group's reserve for the obligation to abandon pipelines and land reclamation of the Company amounted to KZT 35 bln (as of 31 December 2020: KZT 114 bln) (details in the consolidated financial statements in Note 4).

Environmental remediation

KMG also makes estimates and makes judgements on the formation of reserves for obligations for environmental clean-up and rehabilitation. Environmental costs are capitalised as an expense based on or attributable to their future economic benefits.

The Company's environmental remediation reserve represents management's best estimates based on an independent assessment of the expected costs required for KMG Group to comply with the existing Kazakh and European regulatory frameworks. As of 31 December 2021, the carrying amount of the provision for environmental liabilities was KZT 63 bln (31 December 2020: KZT 65 bln) (details in the consolidated financial statements in Note 26).

Water protection

Water is an integral part of all KMG production processes. In its activities, the Company strives to reduce water consumption, increase water use efficiency, drive up water reuse and recycling, improve the quality of effluents, and minimise the impact on natural water bodies.

KMG is a vertically integrated company engaged in the production, transportation, and processing of hydrocarbons. All processes require significant use of water. KMG takes water from surface and underground sources, municipal water supply systems, and the Caspian Sea. Wastewater from KMG's operations mainly received by specialised receivers: storage ponds, evaporation and filtration fields. Those facilities are technical structures designed for natural treatment of wastewater and preventing environmental pollution. Operations that do not have their own storage facilities transfer wastewater to dedicated companies for treatment and disposal. The quality standards for discharged water established by environmental laws are met through the use of mechanical and biological methods of effluent treatment. However no wastewater is discharged into surface natural water bodies.

Atyrau Refinery

The Tazalyq project is one of the main ongoing environmental initiatives of Atyrau Refinery LLP. It includes an upgrade of mechanical and biological treatment facilities, the construction of an advanced treatment facility, and the upgrade of the evaporation fields.

Most of the facilities have been built as part of the first stage of the mechanical treatment plants upgrade. The new mechanical treatment facilities will reduce water intake from the Ural River by 10%, and 15% of the factory's treated plant effluents will be reused. Presently, construction and installation works are underway for oil sludge pre-treatment and dewatering units. At the second stage, balancing and flotation units will be built.

In addition, work is underway on the reclamation of 860 hectares of Tukhlaya Balka evaporation fields.

To date, the construction of a dyke between the city part and the factory part of the fields and dykes dividing the fields into four sectors has been completed in full.

In June 2021, Atyrau Refinery and the European Bank for Reconstruction and Development entered into an agreement on financing the TAZALYQ project to the amount of up to $ 80 mln. The implementation of the TAZALYQ project will enable the refinery to introduce modern "green" technologies for wastewater treatment.

Construction of desalination plants near the Kenderly recreational zone, Mangystau Region

KMG is implementing a project to build a 50,000 m^3 per day seawater desalination factory with a trunk pipeline nexty to the Kenderly recreational zone. The purpose of the project is to provide drinking water to the population of the city of Zhanaozen to meet the existing water shortage and reduce the load on the Astrakhan – Mangyshlak main water pipeline. At the moment, the project is planned to be implemented in 2021–2024.

JSC Karazhanbasmunai

Presently, the Karazhanbas field takes water from the Astrakhan – Mangyshlak water pipeline. That source is insufficient to replenish the company's water needs due to the introduction of new production facilities. To address the issue, it was proposed in September 2019 that a desalination plant be built for produced water.

For now, the construction and installation works at the factory are 72% complete. The treatment capacity for produced water will be 42,500 m^3, with desalinated water output at 17,000 m^3 and treated water at 25,500 m^3 per day. At the factory, water will go through five stages of purification, and the output water will be close to drinking water. Thus, 17,000 m^3 of water per day, which the field takes from the Astrakhan–Mangyshlak water pipeline, will be "released" for the population.

The erection of the building itself was completed as was the construction of steel tanks that were successfully hydrotested.

For more details on KMG's water management and related projects, see KMG's Sustainability Report.

KMG Group's water footprint and water management disclosures were posted on the CDP's website as part of the 2020 Water Security Questionnaire. Data for 2021 will be disclosed in Q3 2022.

For more details, see KMG's published reports, which are publicly available at: CDP 2019 Water Security Questionnaire

Occupational health and safety

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

JSC NC KazMunayGas and its subsidiaries and associates establish that the life and health of employees have priority over the results of production activities and prevention of hazardous production factors in the field of occupational health and safety.

KMG's Occupational Health and Safety Policy is driven by our senior management setting the tone at the top in occupational health and safety and engaging every employee in building a robust safety culture. Management teams at KMG and its subsidiaries and associates take a zero tolerance approach to losses and damage caused by accidents (including traffic accidents), emergencies, as well as by the use of alcohol, narcotic drugs, psychotropic substances or their analogues. KMG is committed to ensuring compliance with both national laws and relevant international and national standards. The Company will continue to work to ensure a high level of production safety in accordance with global standards and best practices.

2021 highlights

As an industry leader in Kazakhstan, KMG places a strong emphasis on health and safety of its employees and local communities across its footprint. According to our employees, the Company creates safe working conditions and complies with the highest standards to ensure health and safety at the workplace.

In 2021, the number of work-related accidents decreased by 7% year-on-year (from 30 accidents in 2020 to 28 in 2021), with the number of injuries at last year's level.

In 2021, there was one fatal work-related accident where three employees died (as a result of a fire at Petromidia Refinery, Romania).

The number of road accidents increased by 57% (from 14 accidents in 2020 to 22 in 2021), and the number of fires remained the same as last year, i.e. six.

Key highlights

	Unit	2019	2020	2021	Change 2021/2020	%
Accidents	Acc.	39	30	28	-2	-7
Number of injuries	People	46	32	32	0	-
Road accidents	Acc.	36	14	22	+8	57
Fires	Acc.	9	6	6	-	-

Accident and fatality rates

Indicator	2019	2020	2021	IOGP[1]
Lost Time Incident Rate (LTIR), per mln person-hours	0.31	0.29	0.34	0.20
Fatal Accident Rate (FAR), per 100 mln person-hours	2.93	0.0	1.48	0.56

Process safety management

Since 2021, the Company has been gradually implementing the Process Safety Management System (PSM) at KMG's production facilities to prevent major catastrophic accidents from happening (emergencies, incidents, fires, and accidents), including:

- maintaining the integrity of assets and process equipment;
- establishing safe operating rules, regulations, and procedures in accordance with the statutory requirements of the Republic of Kazakhstan, industry standards, and international best practices and approaches in the field of process safety management (IOGP, OSHA);
- identification of process risks and application of appropriate measures to prevent and mitigate them;
- avoiding damage and losses related to the life and health of the Company's employees and the public, environmental, financial and legal consequences, property and assets, reputation and image.

The company is confident that the combination of engineering and management elements is effective and seeks to prevent any major catastrophic accidents involving the loss of process equipment containment and, as a consequence, the collapse of structures, explosions, fires, destructive emissions and spills of hazardous substances (chemicals, oil, and oil products). Those engineering and management elements exceed the requirements for workplace safety management because they have an impact on people, property, and the environment.

The Company uses key performance indicators (KPIs) to monitor and analyse the Process Safety Management System:

- lag indicators that allow tracking and recording the actual integrity, system failures, and the number of incidents;
- lead indicators that systematically measure the indicators allowing to assess the performance of the protective and control systems and mechanisms making up the barriers.

Transport safety

In terms of road accident statistics, it should be noted that there are risk factors for accidents that are beyond control of the Company. One such factor is a large number of vehicles – more than 11,000 across the Company. The second factor is the geography of the Company's subsidiaries scattered across the Republic of Kazakhstan, as well as their location in cities and towns where there is a high risk of road accidents due to the fault of a third party. For example, 41% of the 22 road accidents that occurred in 2021 were caused by third parties.

To reduce the risk of road accidents, the Company implemented the following set of measures to ensure transport safety.

- As part of the safe operation of vehicles as well as to preserve the life and health of the Company's employees, recommendations were sent under the Road Accident Prevention Action Plan for Subsidiaries.
- Training courses were held for drivers according to a schedule, with testing their knowledge of the Road Traffic Rules of the Republic of Kazakhstan and the updated corporate documents of the Policy and Regulations for the Safe Operation of Land Vehicles of the Company.

[1] Available data on the International Association of Oil & Gas Producers (IOGP) performance indicators for 2020 (https://www.iogp.org/).

- To raise the transport safety level for the Company and its contractors, a preventive event, the Safety Belt, was held in March 2021.
- For outreach purposes and to raise awareness among the employees of the Company and its subsidiaries and to promote the safe driving culture, a video clip was shot in September 2021 on the topic of: "Safe Driving of Motor Vehicles".
- In connection with the beginning of the autumn-winter period and a high risk associated with the seasonal increase in road accidents, preventive events, Safe Traffic in Winter, were held in November 2021.
- A pilot project, Trip Management, was implemented by Embamunaigas.

In 2022, it is also planned to prepare and train coaches from among the Company's employees (transport/traffic safety engineers) under the Defensive Driving programme for international accreditation by OPITO, ROSPA, etc.

Fire safety

Six fires occurred in KMG Group in 2021 (just as in 2020), including two large fires with fatalities (three dead and one injured) and significant property damage.

Based on the results of the inquiry into the circumstances and causes of the fires, the following main systemic causes were identified:

- poor commitment and leadership of senior management and line managers;
- low level of safety culture and competence of managers / employees in charge;
- insufficient funding for industrial and fire safety measures;
- inadequate risk assessment and management of "barriers";
- poor quality of training sessions on people evacuation in case of fire in dormitories and shift camps.

To prevent and avoid fires and ignitions, the Company has taken the following preventive measures to ensure fire safety:

- After large fires, the implementation of Measures to Prevent and Avoid Fires for the Company was immediately requested, with particular attention paid to fire fighting tactics and drills both at production facilities and in shift camps.
- Based on analysing the reports submitted by subsidiaries, random inspections were carried out in November and December 2021 to prevent and avoid fires in dormitories and shift camps across all business lines of the Company.
- To strengthen control over compliance with fire safety requirements and improve the Company's preparedness to promptly respond to and eliminate fires, the Integrated Action Plan for 2022–2024 was developed and approved, providing for short-term, medium-term, and long-term measures as well as preventive measures to ensure fire safety at the Company's facilities.
- The Rules for inspection and assessment of KMG Group's

entities' preparedness to prevent and extinguish fires have been updated and re-approved with reference to Kazakhstan's statutory fire safety requirements, the KMG Group HSE Management System Guidelines, international standards, and IOGP recommendations.
- For the purpose of fire-fighting outreach and increasing staff awareness, a fire safety handbook for employees and visitors was developed, and a fire safety month was held at the Company's offices from 4 October to 4 November 2021.
- To reduce the risks of fires and ignitions during the New Year holidays and long weekends, a letter was sent to all business segments of the Company in December 2021, requiring that additional measures be taken to ensure compliance with the fire and electrical safety requirements both at production facilities and in shift camps.

The following initiatives are planned for 2022 to improve the Company's industrial and fire safety:
- implementing new HAZOP analysis approaches engaging a third-party specialist company at Rompetrol;
- conducting a comprehensive risk assessment to identify potentially hazardous facilities and equipment by using the Risk Based Inspection (RBI) method with the support of JSC Samruk-Kazyna;
- developing a reference manual on the basics of Process Safety / Barrier Management as part of support provided to the Company's entities;
- implementing short-term measures under the Integrated Fire Safety Action Plan for 2022–2024 approved by the Chairman of the Company's Management Board;
- checking and evaluating the preparedness of non-state firefighting services to prevent and extinguish fires at the Company's facilities as part of the Contractor Management process.

Digitisation of HSE processes

The Trip Management project was initiated to improve transport safety, foster a safe driving culture, and establish a single centralised digital platform, which is being piloted at JSC Embamunaigas.

The project aims to improve road safety through instilling a safe driving culture based on global best practice, advanced digital solutions, and process automation. The project will also unify the trip safety management requirements for all ground transport operations, implement a centralised tracking of key metrics, and enable improved fleet utilisation through analytical reports and corporate-level indicators.

Embamunaigas' facilities completed the implementation of stage I of the project, with a unified monitoring system for motor vehicles implemented. Stage II planned for Q1 2022 involves functionality expansion in terms of "monitoring deviation from the route" and connection to a unified monitoring system for contractors' companies.

In 2022, it is planned to replicate the Trip Management project aiming to improve the transport safety condition, reduce road accidents, ensure smart scheduling and accounting, and monitor the efficiency and intended use of vehicles, fuel, and lubricants.

Improving the HSE management system

To protect the life and health of employees during the operation and maintenance of land vehicles, to prevent road accidents and reduce their severity, the JSC NC KazMunayGas Policy for Safe Operation of Land Vehicles was updated and approved, as were the JSC NC "KazMunayGas Group Regulations for Safe Operation of Land Vehicles. All subsidiaries and associates initiated and approved a similar Policy and Regulations for Safe Operation of Land Vehicles. Also, the requirements of that Policy and those Regulations were explained and communicated to all employees via email and/or at briefings.

Corporate Standard was developed and approved for engaging contractors on occupational health, industrial safety, and environmental protection at JSC NC KazMunayGas Group.

JSC NC KazMunayGas' Occupational Health and Safety Policy was developed and approved.

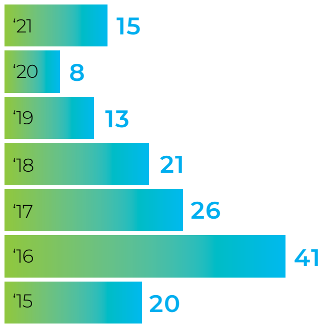
JSC NC KazMunayGas' Operating Instruction on Fire Safety in Office Buildings was developed.

In order to evaluate, analyse, and mitigate the industrial safety, occupational health, and environmental protection risks of JSC NC KazMunayGas Group's contractors, quarterly reports are put together and submitted to KMG's board of directors with respect to contractors' HSE breaches, including a summary of penalties imposed.

Fires and significant HSE incidents are promptly reported to the Board of Directors of JSC NC KazMunayGas.

Upon completion of investigation, relevant materials, including an investigation report specifying immediate and root causes and financial damage, copies of orders on disciplinary actions against

Fatalities not related to injuries



employees guilty of the incident, as well as documents specifying post-investigation changes and documents aimed at preventing similar incidents in the future, are submitted to KMG's Board of Directors.

Occupational health and hygiene

3 GOOD HEALTH AND WELL-BEING

The Company manages occupational health and hygiene matters in accordance with the requirements of Kazakh laws and international occupational health standards. KMG is strongly focused on employee health protection and improvement, irrespective of the specific production process involved.

The number of non-injury related fatalities among employees of subsidiaries and associates increased by seven incidents, or 87.5%, year-on-year. Most of the increase in those figures was due to cardiovascular diseases and complications from the coronavirus infection.

In December 2021, training in cardiopulmonary resuscitation was organised for the staff of the KMG CC. Fifteen employees took the Basic Course in Cardiopulmonary Resuscitation (BLS) offered by AIMED International Professional Development Centre LLP.

As part of the Roadmap to improve the efficiency of employee health management within KMG Group, a working group was set up in June 2021, with two medical experts engaged. To implement the Roadmap, the medical care for KMG Group's employees was analysed, with a visit to the following subsidiaries and associates: Kazgermunaigas, Embamunaigas, KazTransOil, Atyrau Refinery, Kazakhhoil Aktobe, and KazakhTurkMunay. Efforts were taken to develop the Staff Health Management Programme. The programme was included in the KMG Strategy for 2022–2031, which will focus on three main areas: combating the pandemic and its consequences, prevention of occupational diseases, and raising awareness and motivation of employees of or to a healthy lifestyle. Currently, it is undergoing approval by relevant Departments of KMG Group.

In accordance with the approved Plan, the following activities were carried out in 2021:

1. employees responsible for occupational health and safety were appointed in subsidiaries and associates;
2. measures were stepped up regarding pre-shift health monitoring of workers and their admission to work;
3. control of compliance with the dynamic observation of employees with chronic cardiovascular diseases (CVDs) by a serving medical organisation;
4. medical workers at medical stations are equipped with all the necessary equipment to conduct a pre-shift medical examination;
5. working conditions and risks are assessed to determine the age group of workers at risk, with measures taken to reduce the effect of hazardous and harmful production factors on the health of workers;
6. measures were stepped up for primary prevention of CVDs, including both therapeutic measures during disease exacerbation and therapeutic measures to prevent them.

KMG's efforts are mainly focused on improving the quality of medical services provided by specialised organisations as part of their contractual obligations, including mandatory preliminary (upon entering employment) and periodic medical examinations (health check-ups) of employees engaged in heavy work and work in a harmful and hazardous environment.

There were no cases of occupational diseases in KMG Group.

Progress and ongoing initiatives on preventing the spread of COVID-19

With the onset of the COVID-19 pandemic, KMG Group has amassed useful experience in combating the coronavirus. At the same time, no production processes have ever been stopped throughout the entire period of the pandemic.

Since the start of the pandemic, as of 31 December 2021, there were 5,972 cases of the COVID-19 infection (including cases of the COVID pneumonia without laboratory confirmation) and 119 deaths resulting from the coronavirus and pneumonia registered among the group's workers (96 in 2020 / 23 in 2021).

To prevent the disease and minimise the spread of COVID-19, as well as to reduce the impact on production processes, the group takes all the necessary organisational steps and appropriate comprehensive measures to counter the pandemic, including:

- The crisis management team at KMG's Corporate Centre and the emergency response teams at KMG's subsidiaries continuously monitor and control the situation and make the necessary management decisions to prevent the spread of the coronavirus by using COVID-19 response protocols, with plans also developed to ensure business continuity and business process recovery
- Before shift rotation, all rotating staff and contractors are lab tested for COVID-19, with arrangements made for the mass testing of employees of subsidiaries and associates, raising awareness of the disease danger and staying alert amid the pandemic
- Restrictions on mass events continue to be in force
- Personal protective equipment and disinfectants are provided in required quantities for the protection of people and disinfection of spaces
- Protocols to be followed if infection is suspected or detected have been implemented. All employees have been advised of the need to promptly report positive test results and their first coronavirus symptoms upon discovery as well as of the liability for withholding such facts, test falsification, or quarantine breach
- To prevent COVID-19 and comply with anti-epidemic rules, regular awareness raising activities are ongoing for employees on prevention (use of antiseptics, masks, social distance, and temperature measurement), disinfection, sanitation, and hygien
- In the event of disease outbreaks among employees, lockdown restrictions are imposed, with workforce reduction at operating facilities or back-up crews involved in operations, and, to the extent possible, personnel are switched to working remotely.

In general, a range of preventive measures and strict disinfection and sanitary protocols are still in place across KMG Group's operations in accordance with the established anti-epidemic regulations.

Since the start of the state vaccination campaign, action plans have been implemented to organise and encourage vaccination of employees, whereby strenuous awareness-building efforts are being taken to explain the importance of vaccination for collective immunity and ensure the stable continuous operation of the Group's production facilities.

KMG Group's employees are vaccinated in outpatient clinics at their place of residence and at private medical institutions. KMG's operations have all the conditions necessary for that purpose, with vaccination stations organised in the central offices, in dedicated points at the fields, and in medical centres.

For the most part, employees have a positive attitude toward the vaccination campaign and actively participate in it. When each of the two components is received, all employees get two paid days-off.

At the same time, according to the current regulations of sanitary doctors, workers who have received both components of the vaccine have unimpeded access to the fields without taking PCR tests.

As of 31 December 2021, 50,000 employees (76% of the total headcount) were vaccinated across the Group, of which 48,000 (73%) had received a complete course of vaccination (both components).

Also, in subsidiaries and associates as well as in KMG's administration building, employees use the Ashyq application to enter. The corporate centre has successfully integrated the access control system (ACS) with the Ashyq information system (access with the "red" or "yellow" status is automatically blocked by the ACS, and when the status changes to "green" or "blue", access is restored).

Personnel development

Social responsibility

KMG's Code of Corporate Social Responsibility is developed according to the Company's Development Strategy aimed at ensuring social stability of operations, providing social support to employees, contributing to the development of the operating regions, promoting social partnership, and developing human capital.

The Company achieves its key social responsibility objectives through existing systems of internal communications between employers and employees, cooperation with local executive bodies and trade unions, and fair collective bargaining with employees.

KMG complies with the legal and regulatory requirements applicable in the Republic of Kazakhstan, as well as with international laws and treaties regulating oil companies, and is aware of its responsibility to shareholders, the public, and investors for the impact on the economy, environment, and society, for the creation of long-term business value, and for sustainable growth in the long run. All employees of the Company have the right to safe and healthy working conditions, to recognition and fair evaluation of their contribution to the Company, to assistance in enhancing their professional skills, and to open and constructive discussion of the quality and effectiveness of their work. The Company has a zero tolerance policy for discrimination by nationality, race, religion, age, gender, political beliefs or other grounds.

We promote meritocracy, fairness, and integrity while providing every employee with a workplace conducive to new achievements and assessing their respective contributions to KMG's overall success based on merit. We also foster a culture of understanding and engagement, and support among our employees at all levels.

According to JSC NC KazMunayGas Development Strategy for 2022–2031, KMG will develop the employee health management programme to care for health and improve life quality of KMG Group employees. The programme will focus on three main areas:
- prevention of occupational diseases
- improved employee awareness of, and motivation for, a healthy lifestyle
- measures to tackle the pandemic and its implications.

In the area of occupational disease prevention, it is planned to optimise report forms No. 3 and No. 4 of KMG's Health Information System and add new items including occupational intoxication and diseases to ensure complete record-keeping of disease incidences in KMG Group. The Health Information System developers are currently working on this.

In 2021, KMG's sustainability performance was evaluated at the international level by Sustainalytics rating agency, the social aspect for 2021 was scored at 72 (70 in 2020). KMG was ranked 16th out of 251 industry peers worldwide, which reflects the Company's robust social responsibility performance.

Social stability

KMG strives to ensure social stability at its enterprises through a constructive dialogue with employee representatives and to prevent any protests. We make ongoing comprehensive efforts to maintain social stability, including measures implemented under the group-wide social policy. We carry out scheduled activities to improve social stability in subsidiaries and associates, compile a Social Stability Index, leverage internal communications, engage with contractors, promote social responsibility, etc.

To maintain social stability at our enterprises, we are implementing the 2020–2021 Action Plan to enhance social stability at subsidiaries and associates of JSC NC KazMunayGas.

The Action Plan is developed based on Samruk Research Services[1] surveys carried out by the Social Partnership Centre at JSC Samruk-Kazyna for all major KMG subsidiaries and associates.

In 2021, KMG's integrated index under Samruk Research Services was 79%.

The involvement index in all subsidiaries and associates was at a favourable or stable level, and amounted to 83%, which is the highest level for the entire history of the surveys.

The social well-being index was at a stable level (61%). It should be noted that the social well-being index depends on external economic factors, wage rates, and financial awareness. The social tranquillity index reflects the level of social tensions among employees, protest potential, and motives of hypothetical readiness to protest. This index amounted to 80%, which corresponds to a stable level according to the rank scale.

Despite all efforts taken to maintain social stability at the enterprises, 40 cases of dissatisfaction among contractor employees were recorded in 2021. They resulted from considerable difference in wages of the employees of KMG's subsidiaries and associates and the employees of oil service contractors due to changes in the Labour Code implemented in January 2021 and stipulating equal wages for regular and temporary employees.

KMG dealt with the contractor claims on a case-by-case basis to settle the disputes (scopes of work, tariff increase, use of internal resources of the employer, etc.).

The majority of conflicts were settled through internal reserves of employers who actually underpaid their employees. However, to strengthen the achieved positive results, KMG resolved to increase the scopes of work to be performed by contractors, which is reflected in production programmes for 2022.

We took steps to reduce the wage gap between our and contractors' employees, have a bonus scheme similar to that of the customers, and guarantee a social package.

As a result, salaries of contractors' employees added 30–35% on average. We have already signed 156 additional agreements with 90 contractors to this end, which entailed additional expenses of about KZT 35 bln.

However, these measures did not satisfy contractor employees in full. The second wave of strikes among contractor employees happened in early 2022 aggravated by the January events. It was caused by increase in liquefied gas prices on 1 January 2022 as a result of the transition to market pricing mechanism. In February 2022, some employees of JSC Ozenmunaigas suspended work in Zhanaozen requesting wage increase by at least 40%.

KMG management held negotiations with OMG trade union leaders and met the employees. To stabilise the situation, ensure seamless operation of facilities and prevent further conflict escalation, KMG made a decision to increase wages by 30% vs 2021.

Employee headcount

KMG Group employs more than 47,000 people across its regions of operation. The actual headcount for KMG Group at the end of 2021 was 47,437 people, of whom 44,650 were full-time employees, while 2,787 employees were outstaffed. This headcount does not include 11,242 employees of JSC KazTransGas (JSC NC QazaqGaz), which was transferred to our majority shareholder Samruk-Kazyna on 9 November 2021.

Given that the Company's activities involve heavy, dangerous and hazardous working conditions, 82% of employees are male and 18% are female. Blue-collar employees account for 92% of the total headcount, while white-collar employees make up 8%.

[1] Samruk Research Services is a sociological survey that reveals employees' mood, their social harmony, and the level of protest sentiment. In addition, the index helps identify matters of concern for employees of individual enterprises.

In terms of age, the majority of employees (59%) are between 31 and 50 years old, and of those 81% are male and 19% are female.

Employees aged over 50 account for 29% of the total headcount; 81% of them are male and 19% are female.

The share of young people aged under 30 is 12% of the total headcount, including 86% male and 14% female employees.

In 2021, KMG created 945 jobs, which accounts for 2.1% of the average headcount. The number of employees whose employment was terminated in the reporting period is 2,757.

The percentage of employees who are managers at all levels is 11% of the total headcount. 18% (2020: 18%) of managers are female and 82% (2020: 82%) are male.

The 2021 turnover rate for KMG Group was 6% (2020: 6%).

Employee headcount beakdwon

Indicator	Unit	2019	2020	2021
Actual headcount for KMG Group (consolidated)	Employee	61,587	60,173	47,437

Breakdwon

Indicator	Unit	2019	2020	2021
Male	%	82	81	82
Female	%	18	19	18
Blue-collar employees	%	91	92	92
White-collar employees	%	9	8	8
Employees aged 31 to 50, including:	%	58	60	59
• male	%	80	80	81
• female	%	20	20	19
Employees aged over 50, including:	%	27	28	29
• male	%	82	82	81
• female	%	18	18	19
Employees aged under 30, including:	%	14	12	12
• male	%	85	83	86
• female	%	15	17	14
Jobs created	jobs	385	961	945
Of average headcount	%	0.6	1.6	2.1
Employment terminated	employee	4,512	3,513	2,757
Managers at all levels, including:	%	11	11	11
• male	%	83.5	82	82
• female	%	16.5	18	18
Turnover rate for KMG Group	%	7	6	6

Development of the Company's regions of operation

KMG contributes to social and economic development in the regions of its operation. The Company actively cooperates with local authorities, maintains an ongoing dialogue with key stakeholders, and focuses on training and development of young skilled specialists. It also implements social initiatives for KMG Group's employees and is committed to supporting domestic producers through off-take agreements. KMG Group companies invest in the development of socially important facilities, construction of sports complexes, regional social and economic development, etc. under subsoil use contracts and the Comprehensive Development Plan.

The subsoil use contracts signed by KMG subsidiaries provide for significant investment in developing the regions of operation and in social support to vulnerable population groups. The Company's subsidiaries and associates also provide funds to local executive bodies, which are further distributed in line with the needs of local communities under agreements and memoranda concluded with the akimats of the respective regions. On top of that, KMG makes timely progress on its commitments under the Zhanaozen Comprehensive Development Plan. In 2021, the Group allocated KZT 5 bln for this purpose.

As part of the Comprehensive Development Plan, JSC OzenMunaiGas has financed a number of projects, including the expansion of the utility maintenance function (to 350 jobs) of Ozeninvest, Zhanaozen Akimat's utility company, subsidising the dormitory rent for Zhanaozen youth working and living in Aktau, acquisition of housing in Aktau to provide social housing for vulnerable population groups relocating from Zhanaozen, and construction of sports facilities in Zhanaozen subject to design documents, for a total amount of KZT 3 bln.

JSC OzenMunaiGas allocated KZT 900 mln to finance the development of social infrastructure in Zhanaozen and the Karakiya District.

JSC Embamunaigas invested KZT 200 mln to build a community centre for 300 visitors in Tasshagyl; KZT 132 mln to build a sports facility for 160 visitors in Makhambet; and KZT 83 mln to build a medical aid post in Asan.

JSC Mangistaumunaigaz invested KZT 300 mln to support social, economic and infrastructure development of the Mangystau Region as part of an agreement with the region's akimat. Moreover, it allocated KZT 60 mln to provide the region's residents with meat at affordable below-market prices by purchasing finisher cattle from local private subsistence and peasant farms, and to assist local agricultural facilities with stocking cattle feed amid the drought by providing 100 tonnes of diesel fuel to compensate for transport expenses.

JV Kazgermunai LLP invested around KZT 145 mln in social, economic and infrastructure development of the Kyzylorda Region.

JSC Karazhanbasmunai allocated KZT 230 mln to support social, economic and infrastructure development of the Mangystau Region as part of an agreement with the region's akimat.

Kazakhturkmunay LLP and Kazakhoil Aktobe LLP invested KZT 45 mln and KZT 100 mln, respectively, in social, economic and infrastructure development of the Aktobe Region.

Charity and sponsorship

Samruk-Kazyna Trust Social Development Foundation, Samruk-Kazyna Group's unified charity operator, is responsible for the Company's charitable and sponsorship activities.

Samruk-Kazyna Trust's charitable initiatives focus on assisting people and communities in the social and medical sectors, developing media and cultural communities, fostering human resources, enhancing labour and inter-ethnic relations, investing in sustainable development, and supporting regional business initiatives.

COVID-19 response

Since the beginning of the COVID-19 pandemic, KMG has introduced a number of mechanisms and measures to prevent the spread of the infection across the Group. The accumulated experience in countering COVID-19 enabled us to avoid production disruptions in 2021.

In the reporting year, the Group continued implementing a set of preventive measures in line with pandemic response regulations. KMG Group supported the state vaccination campaign. It undertook steps to encourage vaccination among its employees in order to build herd immunity and ensure uninterrupted operation of the Group's production facilities.

As at the end of 2021, 50,000 employees of KMG Group (or 76% of the total headcount) were vaccinated. 48,000 employees (73%) had received both doses of the vaccine.

Student and young talent engagement

Amid the ongoing globalisation and changes in the industry, graduates are expected to be increasingly more qualified. KMG Group companies actively cooperate with educational institutions to develop and promote a practice-oriented approach to training a new generation of specialists and unlocking students' professional skills. The Company implements a dual education programme, wherein students get hands-on workplace experience thanks to production facilities and educational institutions joining forces to foster highly skilled employees. In 2018–2021, 244 students took part in the programme, of whom 98 got jobs at KMG production facilities – JSC Embamunaigas, Pavlodar Refinery LLP, and Atyrau Refinery LLP.

With the Kazakhstan Petrochemical Industry Development Programme currently underway and the planned launch of two large petrochemical plants in the Atyrau Region, the Company is taking active steps to create a modern petrochemical educational cluster together with Atyrau Oil and Gas University.

Atyrau Refinery led a complete upgrade of the infrastructure and equipment of the university's former Chemistry and Chemical

Technology department, including full refurbishment of lecture halls and chemical laboratories, their kit-out with furniture and equipment, and outfitting of auxiliary rooms. The university now houses the Institute of Petrochemical Engineering and Ecology and 12 new labs with state-of-the-art equipment to help students acquire practical skills in using instrumental methods of physical and chemical analysis to study oil, gas and refined products.

In 2017, Samruk-Kazyna Fund initiated the Zhas Orken programme aimed at training and developing a new generation of managers with a broad set of professional skills and the Digital Summer programme that focuses on attracting young talent to the Fund's digitalisation projects.

The key strong point of these programmes is the opportunity to learn faster with the help and support from highly experienced mentors working at the Company. As part of the Zhas Orken programme, young specialists undergo rotation at the Fund's four different sites across the country.

Since the launch of the programmes, 61 young specialists have studied at KMG Group under the Zhas Orken programme (with 15 becoming employees), and 18 specialists, including students, have received training under the Digital Summer programme (with three becoming employees later on).

Unified internal communications system

KMG Group has in place the Regulations on the Unified System of Internal Communications aimed at establishing and maintaining feedback between employers and employees of the Group, as well as improving social and psychological environment for the Company's staff.

The Group has adopted standard regulations on the unified system of internal communications in order to create and maintain effective mechanisms enabling direct communication between employers and employees at subsidiaries and associates, timely inform employees about the goals and objectives of activities carried out at subsidiaries and associates, communicate the current situation in the organisation to employees, and monitor the social and psychological climate among employees of subsidiaries and associates.

The principal internal communication tools are:

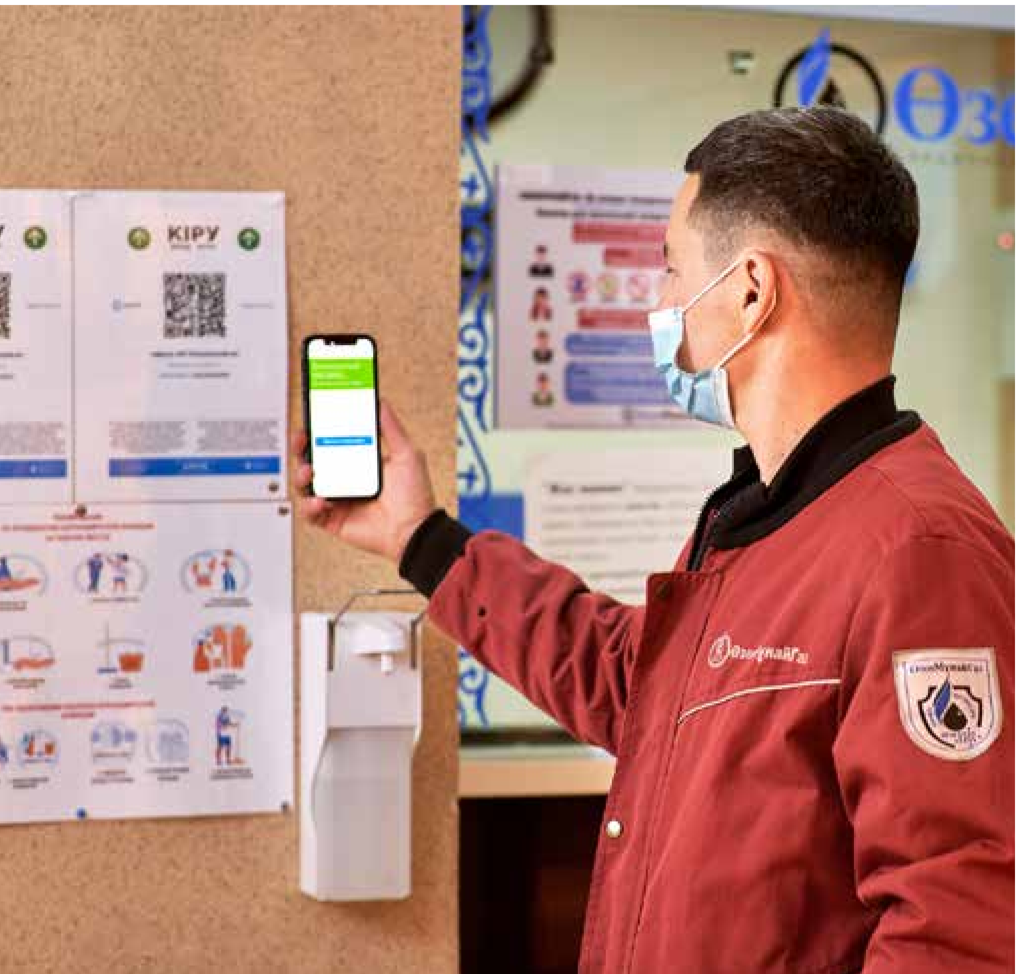
- planned reporting meetings between the chief executive officer and employees (held twice a year)
- ad-hoc meetings between management and trade unions/employees to discuss urgent issues requiring immediate decisions
- corporate information website and newspaper
- a screen for video announcements; a box for employees' proposals
- teambuilding: professional skills competitions, sporting events, corporate parties, etc.

The Regulations enable any employee to ask questions and receive a timely response.

During the pandemic, all communication systems (meetings with employees, CEO blog, information boards, boxes for proposals and requests) remained operational.

Social support for employees

KMG Group has a Standard Collective Bargaining Agreement Form for Group companies that defines the types of social support for employees of KMG subsidiaries and associates and rules for providing it.



According to KMG Group collective bargaining agreements, there are 35 types of social support. In the reporting period, all the terms and conditions of collective bargaining agreements were met and maintained across all KMG enterprises, regardless of their financial and economic situation. The amount of social benefits significantly increased compared to previous periods.

Over 2021, KMG Group companies spent approximately KZT 22 bln on social support for their employees, including social support for unemployed retirees.

In addition to providing social support to its own employees, the Company decided to introduce minimal social benefits for contractor employees starting 1 January 2022. These include payments related to the birth of children, assistance for school children at the start of the school year and for children with disabilities, benefits tied to Nauryz and 8 March holidays, etc.

Subsidiary and associate interaction with contractors

Well aware of potential negative consequences of contractor downtime during the pandemic, KMG took steps to ensure maximum support for its contractors by ordering works to maintain employment as it balanced own corporate interest and the socio-economic environment.

Distribution of social support for employees of the KMG Group of companies

Indicator	%
Health insurance for employees and their families	22
Financial assistance related to the birth of children / pregnancy and childbirth / parental leave / payment for preschool institutions / education of employees' children / purchase of school supplies for the start of the school year	16
Financial assistance to large families and low-income families / workers in special need / disabled people, workers with a spouse or children with disabilities from childhood (1st, 2nd and 3rd groups) in connection with the death of an employee / employee's family members / for organising a funeral / due to general inability to work or disability	14
Financial assistance to retirees	10
Financial assistance to pay for medical treatment / surgery when the cost of treatment/surgery exceeds the limit established by the voluntary medical insurance programme / to internationalist soldiers (Afghans) / Chernobyl liquidators / temporary disability benefits	9
Recreation / improvement of employees' housing conditions	9
Other types of social support	20

To ensure salary growth for contractor employees, KMG recommends its subsidiaries and associates to set requirements to contractors at the contract signing stage so as to keep monthly wage/salary rates at least at 70% of the monthly wage/salary rates for similar jobs at KMG subsidiaries and associates. To that end, KMG Group allocated KZT 3.8 bln in 2021 and plans to spend up to KZT 10.1 bln more in 2022.

Furthermore, to ensure stable relationship with contractors working at its sites, the Company implements standard regulations on interaction between KMG subsidiaries and associates and contractors. The document focuses on protecting social and labour rights of contractor employees through compliance with established labour guarantees.

The regulations are mandatory for KMG subsidiaries and associates when concluding and monitoring performance of contracts with contractors that have employees of their own. The regulations will be included in contracts between KMG subsidiaries and associates and their contractors.

Company-wide events

KMG Group holds various events every year. For example, we organise a corporate sports competition and the Uzdyk Maman competition to promote a healthy lifestyle and professional development.

Moreover, there are Youth Councils operating across the Group. Their members take part in different cultural events, workshops, etc.

However, no mass events were held during the COVID-19 pandemic.

Priority areas of our social policy

Training and professional development programmes

Digital Transformation Management training

Implementing innovative technology in production is one of KMG's priorities. The Company has developed and is implementing a uniform approach to digital transformation of production operations across the Group.

To improve digital transformation competencies of the top management, KMG teamed up with the SKOLKOVO Moscow School of Management to arrange the Digital Transformation Management programme involving heads of digitalisation from large Russian production companies, such as SIBUR, Severstal and Gazprom.

The training programme successfully achieved the following objectives:

- Exploring the topic of digital transformation (its necessity and value);
- Analysing key digitalisation challenges, opportunities and risks facing the industry;
- Looking at case studies of bellwether companies and latest digital transformation tools.

Mandatory safety training

Since 2021, mandatory training sessions for KMG CC employees in occupational health and industrial and fire safety basics have been held on the platform of KMG Engineering LLP.

ISO training

KMG has in place four management systems in line with international ISO standards: quality management system (ISO 9001), environmental management system (ISO 14001), occupational health and safety management system (ISO 45001), and information security management system (ISO 27001).

KMG has obtained certification for all of them to assure its stakeholders that the service quality, environmental activities, health and safety management and information security mechanisms are under the Company's complete control.

Every KMG business unit designates employees responsible for maintaining the management systems, as well as the information and information security management systems. The headcount totals 46 employees.

Building Compliance Control System and Managing Compliance Risks

As part of the Action Plan to Minimise Compliance Risks and regular monitoring of the Company's and its employees' compliance with regulatory and ethical requirements, we held Building Compliance Control System and Managing Compliance Risks training sessions for all KMG CC employees.

The training programme's main topics included a brief introduction to the compliance control system and anti-corruption legislation (Kazakh laws, UKBA, FCPA and Sapin II), conflict of interest (declaring and settling), liaison with state authorities and political figures, reputational risk, compliance risk, and business process control (in procurement, HR, M&A, marketing, etc.), as well as the Company's hotline and more.

Supplier relations

Efficient procurement system

Ensuring efficient procurement while striving to comply with sustainability principles is an integral part of KMG's activities, which contributes to the achievement of strategic and operational goals.

The key principles of KMG Group's procurement activities include legal compliance and compliance with internal requirements, transparency of procurement procedures, promotion of fair competition, and provision of equal opportunities for counterparties. At the same time, KMG implements a number of initiatives in procurement to support domestic manufacturers as part of the Programme to Promote the Modernisation of Existing and Creation of New Production Facilities.

Procurement management at KMG companies is based on three documents:

1. Procedure for Carrying out Procurements by Joint-Stock Company Sovereign Wealth Fund Samruk-Kazyna and Companies Where JSC Samruk-Kazyna Directly or Indirectly Holds Fifty or More Percent of Voting Stock (Equity Stake) on the Right of Ownership or Trust Management, approved by Resolution of the Fund's Board of Directors No. 161 dated 3 July 2019 (the "Procedure"). The Procedure sets out the key principles of, and approaches to, procurement, the general procurement management procedure, procurement management competence of the Fund and the Fund's Operator for Procurement, main requirements for procurement processes, the definition of applicable procurement methods, grounds for the application of single-source procurement, a tender by carrying out competitive negotiations, and intra-group cooperation.
2. Standard of Procurement Management at Joint-Stock Company Sovereign Wealth Fund Samruk-Kazyna and Companies Where JSC Samruk-Kazyna Directly or Indirectly Holds Fifty or More Percent of Voting Stock (Equity Stake) on the Right of Ownership or Trust Management (the "Standard"), approved by Resolution of the Fund's Management Board No. 31/19 dated 9 September 2019. The Standard of Procurement Management details procurement processes[1] related to procurement category management, procurement planning, supplier selection and management, management of supply contracts and stocks of inventories.
3. Procurement Management Rules in place at JSC NC KazMunayGas and companies where JSC NC KazMunayGas directly or indirectly holds fifty or more percent of voting stock (equity stake) on the right of ownership or trust management (the "Rules"), developed and approved in line with Paragraph 4 of Article 4 of the Procedure applicable to the Fund's first level subsidiaries and companies where the Fund's first level subsidiaries directly or indirectly hold fifty or more percent (Resolution of KMG's Management Board No. 11 dated 26 March 2020). The Rules are aimed at detailing procurement activities and defining stakeholders' area of responsibility, integrating procurement and related processes to maximise the economic effect and cross-functional interaction, as well as defining timelines for business processes.

[1] Details set out in the Standard include timelines, as well as requirements for documents' contents and procedures carried out.

On 1 January 2020, we introduced a new procurement model developed by Sovereign Wealth Fund Samruk-Kazyna Joint-Stock Company (the "Fund", "JSC Samruk-Kazyna") in accordance with Paragraph 2 of Article 19 of Law of the Republic of Kazakhstan No. 550-IV On the Sovereign Wealth Fund dated 1 February 2012, and aimed at implementing a set of initiatives to improve procurement efficiency and transparency.

To maintain and enhance transparency and efficiency in line with the most advanced international procurement standards and technologies, KMG Group uses the E-Procurement IT System portal (the "E-Procurement IT System") providing unhindered access (with certain exceptions, primarily related to state secrets) to procurement information to all stakeholders and ensuring equal opportunities for all participants in the procurement process.

The E-Procurement IT System enables automation and standardisation of all procedures within the procurement cycle (from planning to contract management) to cut the time needed to perform relevant tasks and reduce human factor. E-procurement facilitates market access and thus contributes to improved efficiency, increased competition and reduced administrative burden and operating expenses.

In addition to the public dissemination of information on procurement procedures and procurement contracts, including details of invitations to bid and the terms and conditions of contracts, the E-Procurement IT System envisages the advance establishment of requirements for participation in a competitive procurement, including selection criteria, bidding rules and publication thereof while ensuring an efficient internal control system, including challenging the results of procurement in case of non-compliance with the rules or procedures established by regulations.

Total procurement volume

The total procurement volume in 2021 amounted to KZT 1,082,226 mln, net of VAT.

Reducing supplies from a single source and increasing the share of competitive procurement is an important element of KMG's procurement activities. The respective responsibility of executives of KMG and its subsidiaries and associates is defined, including through the establishment of a target indicator in the KPI Scorecard for executives.

Competitive procurement is carried out by open tender, request for quotations, and competitive negotiations. In 2021, the competitive procurement under signed contracts within KMG Group's annual procurement plan amounted to KZT 447 bln. At the same time, over the past three years the share of competitive procurement has reached 42%, which demonstrates KMG's commitment to fair competition and sustainable development goals.

Competitive procurement

Year	Goods		Works and services		Total	
	Total amount, KZT bln	Share of local content, %	Total amount, KZT bln	Share of local content, %	Total amount, KZT bln	Share of local content, %
2019	473	63	1,659	83	2,132	81
2020	472	71	1,354	86	1,826	82
2021	273	57	943	85	1,216	78

Competitive procurement[1]

Год	Goods		Works and services		Total	
	Total amount	Share, %	Total amount	Share, %	Total amount	Share, %
2018	137	7	375	19	511	26
2019	169	12	326	23	495	36
2020	168	15	252	23	420	38
2021	162	15	285	27	447	42

[1] Competitive procurement comprises procurement carried out by open tender, request for quotations, and competitive negotiations.

Despite our commitment to developing a competitive market, the share of non-competitive procurement carried out within the framework of intra-group cooperation and/or procurement from a single source apparently prevails. In the reporting period, the total cost of goods, works and services supplied (including annual and long-term procurement) amounted to KZT 1,216 bln, with 78% accounted for by local content.

The share of local content in procurement of goods was down 14% year-on-year, due to the spin-off of JSC KazTransGas (purchase of natural gas) from KMG in early 2021.

Pre-qualification of potential suppliers

Global procurement practice demonstrates the extensive development of a mechanism for pre-qualification of potential suppliers. Continuous improvement in procurement, taking into account the requirements and standards applicable in Kazakhstani and international practices, is one of KMG's priorities.

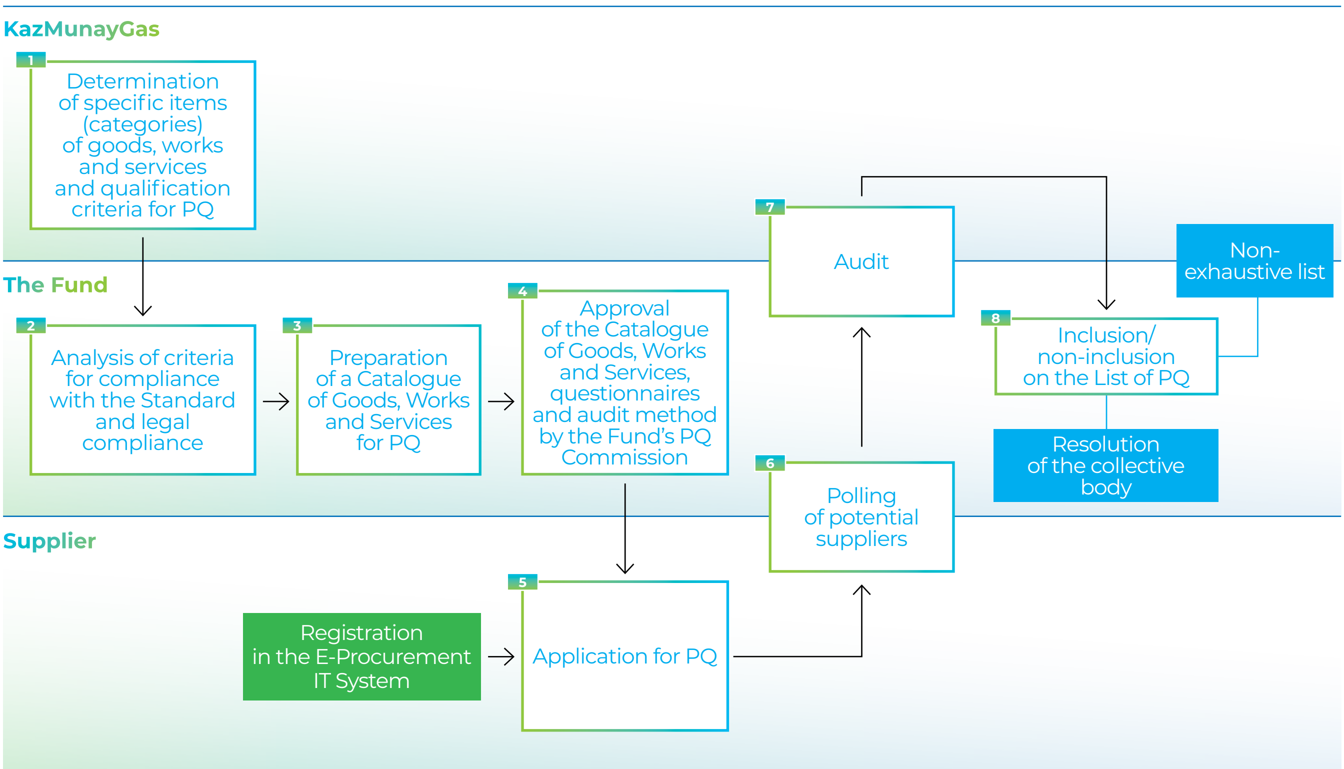
Pre-qualification (PQ) is the process of evaluating potential suppliers for compliance with the qualification requirements defined in accordance with the Standard. PQ is carried out through questionnaires and audits.

The key objectives of PQ are to:

1. set up a simple, transparent and effective process for evaluating suppliers according to established qualification criteria;
2. support local manufacturers;
3. improve the quality of procured goods, works and services;
4. speed up and simplify procurement procedures.

At present, KMG's subsidiaries and associates procure fifteen (15) categories of goods, works and services through open tenders with bidders pre-qualified in line with the PQ procedure.

PQ procedure[2]



[2] Formed list of PQ after collecting information from potential suppliers and after the potential suppliers' passing through the steps of the PQ procedure.

Category-based procurement

Procurement category management is the process of developing a comprehensive approach to reducing costs associated with procurement and with the use of goods, works and services included in priority categories.

Categorisation implies combining goods, works and services into procurement categories on the basis of common characteristics of the object of procurement and/or a single market of potential suppliers. Categories may include one or more items of goods, works and services. Categories characterised by high cost, high criticality, savings potential and manageability are identified as priorities.

Category-based management helps increase the potential for savings through more detailed analysis by developing and approving a category-based procurement strategy. This strategy determines the optimal approach to purchasing goods, works and services, based on the maximisation of benefits in the long or short term. Category-based procurement should contain goals and objectives, internal and external environment analysis, approaches to procurement category management, requirements for supplier development, calculation of benefits, and an implementation plan.

Category-based management results in a significant reduction of the cost of purchase and use of goods, works and services through strategic planning, detailed analysis of goods and services to be purchased, and calculations of the total cost of ownership, as well as cross-functional interaction with various business units. This method of procurement is effective in that it provides both quality and a transparent price by engaging reliable manufacturers and suppliers.

Category-based procurement volume and benefits by year in 2017–2021, KZT mln

Indicator	2017	2018	2019	2020	2021
Category-based procurement volume, KZT mln	231.88	13,948.38	41,531.68	49,716.04	117,436.49
Category-based procurement benefits, KZT mln	85.07	1,565.01	4,101.81	7,011.23	6,494.76 (estimate)

Procurement category management includes:

- categorisation of goods, works and services to be purchased and identification of priority procurement categories
- development (update) and approval of category-based procurement strategies for priority categories
- implementation of category-based procurement strategies
- monitoring of the implementation of category-based procurement strategies
- supplier development.

In 2021, the volume of category-based procurement amounted to KZT 117,436.49 mln. This method is expected to generate an economic effect in the procurement of goods, works and services of priority categories in the amount of KZT 6,494.76 mln.

Commitment to sustainable procurement

KMG's sustainability principles are reflected in its interactions with counterparties based on legitimacy and transparency, compliance with contract terms, incorruptibility and intolerance of corruption in any form, and selection of counterparties based on a mix of factors: best price, quality and terms, as well as the counterparty's business reputation.

At the same time, KMG, in turn, imposes on its counterparties counter obligations to comply with applicable laws, treat employees fairly, not use child labour, ensure safe working conditions, protect the environment, and adhere to other principles of ethical conduct.

These conditions are included in contracts signed by KMG with its counterparties to guarantee respect of labour rights and create favourable working conditions for citizens of the Republic of Kazakhstan, protect children's rights and ensure environmental safety. KMG believes that these measures will help reduce the number of cases of illegal activities at companies cooperating with KMG.

When procuring goods, KMG also establishes requirements for potential suppliers to provide quality management system certificates.

Import substitution

As a company representing the interests of the government in the oil and gas industry, KMG is actively involved in import substitution efforts as part of the state programme to promote the modernisation of existing and creation of new production facilities through off-take agreements.

The programme's primary objective is to support private entrepreneurs who launch new production facilities and undertake technological upgrades to manufacture products in demand by JSC Samruk-Kazyna Group.

Off-take agreements imply the implementation of import-substitution projects with a condition precedent stipulating the purchase and delivery of goods that will be manufactured as a result of the project.

In 2021, KMG's subsidiaries entered into 49 off-take agreements with domestic manufacturers for a total amount of KZT 882 mln.

The share of the imported goods was up 7% year-on-year, due to the spin-off of JSC KazTransGas (purchase of natural gas) from KMG in early 2021.

Imported goods in procurement

Year	2018	2019	2020	2021
Total amount, KZT bln	173	104	94	73
Share of goods supplied without a CT-KZ certificate confirming Kazakhstani origin[1], %	21	22	20	27

[1] The share of goods supplied without a certificate confirming Kazakhstani origin is the share of imported goods supplied in the reporting period.

Consolidated ESG disclosures

Section	Reporting element	Information and the source
Corporate governance		
Corporate governance disclosure with respect to climate risks and opportunities (CR&O)	Control of the Board of Directors over CR&O Management role in assessing and managing CR&O	The Health, Safety, Environment and Sustainable Development Committee acts to assist the Board of Directors by developing and providing recommendations on: • ensuring HSE compliance • embedding sustainability in strategic planning and social and economic development at KMG • KMG's social commitments and programmes under subsoil use contracts • monitoring KMG's environmental performance. For more details, see Health, Safety, Environment and Sustainable Development Committee section
Strategy		
Corporate governance disclosure with respect to CR&O	Control of the Board of Directors over CR&O	As part of the CDP, KMG has been disclosing data on direct and indirect greenhouse gas emissions, greenhouse gas management, and key risks and opportunities across all KMG's assets, including international assets in Romania and Georgia, since 2019. In July 2021, the KMG Climate Change 2020 Questionnaire was published. According to the report, the direct carbon dioxide emissions at KMG Group's level totalled 8.7 mln tonnes in 2020 (9.7 mln tonnes in 2019). The CO_2 equivalent data are presented using the global warming potential set out in the IPCC Fifth Assessment Report (28 for methane and 256 for nitrous oxide). The greenhouse gas emissions data were verified by an independent accredited organisation's report for each subsidiary or associate. Data for 2021 will be disclosed in KMG's CDP report to be published in Q3 2022. We seek to ensure consistency and comparability when preparing our disclosures. We are committed to enhancing disclosures and increasing the scope of reporting around our Scope 3 emissions.
Disclosures on the actual and potential impact of CR&O on the Company's operations, strategy, and financial planning where such information is material	Short-, medium- and long-term CR&O identified by the Company	The Company has developed the 2022–2031 Low-Carbon Development Programme, which includes both existing opportunities to reduce our carbon footprint (higher energy and resource efficiency) and additional areas for decarbonisation (RES, CO_2 capture, use, and storage, forest carbon projects, hydrogen production).
	CR&O impact on the Company's operations, strategy, and financial planning	Several scenarios are modelled based on global economy development: • Net Zero Emissions by 2050 Scenario – a normative IEA scenario of achieving net zero CO_2 emissions by 2050, with advanced economies reaching net zero emissions sooner than others. This scenario also meets key energy-related United Nations Sustainable Development Goals (SDGs). • Stated Policies Scenario (STEPS) – takes account of existing policies and measures, as well as those that are under development. Under the scenario, CO_2 emissions remaining on the current trajectory will lead to a global temperature rise of 2.7 °C by 2100 (with a 50% probability). • Announced Pledges Scenario (APS) – assumes all announced net zero ambitions and targets are on the path to deliver the necessary emissions reductions, regardless of whether these have been anchored in any concrete policies. Under the scenario, CO_2 emissions remaining on the current trajectory will lead to a global temperature rise of 2.1 °C by 2100 (with a 50% probability). • Sustainable Development Scenario (SDS) – a "well below 2 °C" pathway to the outcomes targeted by the Paris Agreement. For more details, see Global Trends and Their Impact on Strategy Implementation

Section	Reporting element	Information and the source
Risk management		
Processes used by the Company to identify, assess, and manage climate risks (CR)	Processes used by the Company to identify and assess climate risks	In its operations, the Company faces risks related to climate change, including: • market risks – risks associated with changes in demand and consumer patterns • political, legal, and regulatory risks – risks associated with the transition of the global economy to low-carbon development and with the measures taken in the Company's countries of operation to make regulations on GHG emissions more stringent • reputational risks – risks associated with perceptions by stakeholders of the Company's participation in the transition to a low-carbon economy or refusal to do so • technological risks – risks associated with the accelerated transition of the global economy to low-carbon development due to the development and increased efficiency of low-carbon technologies • physical risks – risks associated with changes in weather and climate conditions and other characteristics of the natural environment in the Company's regions of operation, which may affect equipment reliability and human health (including risks of natural disasters and permafrost thawing) For more details, see Key Risks section
	The way the processes of identifying, assessing, and managing climate risks are integrated into the Corporate Risk Management System	Data for 2021 will be disclosed in KMG's CDP report to be published in Q3 2022.
Indicators and targets		
Disclosure of indicators and targets used to assess and manage relevant CR&O where such information is material	Disclosure of indicators used by the Company to assess relevant CR&O in line with its strategy and risk management process	Data for 2021 will be disclosed in KMG's CDP report to be published in Q3 2022.
	Disclosure of Scope 1, 2, and 3 (where applicable) GHG emissions and associated risks	
	Targets used by the Company to manage CR&O; performance vs targets	See Commitment to UN Global Compact principles and 17 Sustainable Development Goals section

CORPORATE GOVERNANCE

KMG'S CORPORATE GOVERNANCE RATING HAS BEEN UPGRADED TO “BBB” IN 2021 (FROM “BB” IN 2018)

CORPORATE GOVERNANCE FRAMEWORK

KMG's corporate governance framework represents the totality of processes ensuring management and oversight of KMG's activities and a system of relations between the shareholders (JSC Samruk-Kazyna and the National Bank of Kazakhstan), Board of Directors, Management Board and stakeholders.

The roles of KMG's governing bodies are clearly delineated and set out in KMG's Charter.

KMG's corporate governance structure

General Meeting of Shareholders
JSC NC KazMunayGas

BoD

Christopher Walton, Chairman	●	●	◆	●
Philip Malcolm Holland	◆	◆	●	
Timothy Miller		●	●	◆
Uzakbay Karabalin				●
Gibrat Auganov	●			
Yernar Zhanadil		●		
Alik Aidarbayev, Chairman of the Management Board				

◇ Committee Chairman
○ Committee member

- Nomination and Remuneration Committee
- Strategy and Portfolio Management Committee
- Audit Committee
- Health, Safety, Environment and Sustainable Development Committee

Corporate Secretary

Compliance Service

Ombudsman

Internal Audit Service

Management Board

Alik Aidarbayev, Chairman of the Management Board

Kurmangazy Iskaziyev, Deputy Chairman of the Management Board for Exploration and Production

Dauren Karabayev, CFA, Deputy Chairman of the Management Board for Economics and Finance

Daniyar Tiyesov, Deputy Chairman of the Management Board for Oil Refining and Petrochemicals

Daniyar Berlibayev, Deputy Chairman of the Management Board for Oil Transportation, International Projects and Construction of the Saryarka trunk gas pipeline

Dastan Abdulgafarov, Deputy Chairman of the Management Board for Strategy, Investment and Business Development

Malik Saulebay, Deputy Chairman of the Management Board

The Company's corporate governance framework comprises:

- Supreme body – General Meeting of Shareholders
- Governing body – the Board of Directors, reporting to the General Meeting of Shareholders
- Executive body – the Management Board, reporting to the Board of Directors
- Internal Audit Service is a centralised body that directly reports to the Board of Directors, controls financial and business operations at the Company and other KMG Group entities, members of the Fund pursuant to the Law of the Republic of Kazakhstan on the Sovereign Welfare Fund ("KMG Group"), appraises internal control and risk management systems, oversees implementation of corporate governance regulations and provides consulting on enhancing KMG's and KMG Group's performance
- Corporate Secretary is a permanent and independent employee who is neither member of the Board of Directors nor member of the Company's executive body, is appointed by, and reports to, KMG's Boards of Directors, and ensures implementation of corporate documents and control over KMG's corporate governance framework within their competence
- Compliance Service reports to the Board of Directors, whose role is to ensure compliance with mandatory regulations and global best practices in pursuing anti-corruption policies and building corporate culture across KMG Group to foster transparency and integrity among its employees, as well as to create a business environment aligned with global best practices, internal policies, and Kazakhstan's laws
- Ombudsman is an appointee of KMG's Board of Directors, whose role is to advise KMG employees upon request and assist in resolving social and labour disputes, conflicts and issues, as well as to ensure compliance with business ethics principles among KMG employees.

KMG's corporate governance framework is based on respect for the rights and legitimate interests of KMG's shareholders and key stakeholders: the State, KMG's strategic partners and counterparties (suppliers and customers), investors, and employees, as well as municipalities, local communities, and residents in KMG's operating regions.

KMG's corporate governance framework is continuously improved to reflect the evolving requirements and standards of national and international corporate governance practices.

DEVELOPMENT OF COPORATE GOVERNANCE SYSTEM

As a corporate centre that shapes and implements the development strategy, in particular by engaging in operations of subsidiaries and associates through a divisional management structure, the Company is committed to best corporate governance practices and recognises high corporate governance standards and transparency as key drivers of investment appeal and operational efficiency, boosting confidence among potential investors, counterparties, and other stakeholders, mitigating the risk of inefficient use of corporate resources and increasing the national wealth and KMG's market value.

The Company's Board of Directors oversees the quality of KMG's corporate governance, and the Corporate Secretary coordinates its continuous improvement.

The KMG Corporate Governance Code (the "Code") adopted by resolution of the Management Board of JSC Samruk-Kazyna on 27 May 2015 is the core document underpinning KMG's corporate governance framework and efforts to improve it. The Code was developed in accordance with Kazakhstan's laws and JSC Samruk-Kazyna's internal documents and incorporates principles of best Kazakhstan's and global corporate governance practice as well as JSC Samruk-Kazyna's Transformation Programme.

The Code sets out the principles underlying the Company's corporate governance framework, which are identical to the corporate governance principles of the Samruk-Kazyna group. The Board of Directors and the Audit Committee monitor compliance with the Code's regulations at KMG.

According to the Code, the Corporate Secretary annually reviews KMG's compliance with the Code's provisions and principles using the "comply or explain" approach. At present, most of the Code's provisions have been complied with. Isolated instances of partial non-compliance with certain provisions of the Code have been listed in the Corporate Governance Code Compliance Report, along with the reasons for non-compliance.

For KMG's 2021 Corporate Governance Code Compliance Report see the Appendix to this Annual Report.

Over a course of several years, the Company's Corporate Secretary Office has carried out consistent and systematic work coordinating KMG's efforts to improve its corporate governance practices. Since 2016, the Company has used the review methodology for corporate governance in legal entities in which 50% or more of the voting shares are owned directly or indirectly by JSC Samruk-Kazyna (the "Methodology") to set goals and track the progress of improvements in corporate governance.

The Methodology involves the assignment of a rating to the Company based on the results of its corporate governance review (audit) by an independent party, which is carried out on a regular basis.

As required by the Methodology, the Corporate Secretary Office uses the review findings to develop a Corporate Governance Improvement Plan, with the progress against it regularly reported to the Company's Board of Directors and the Audit Committee.

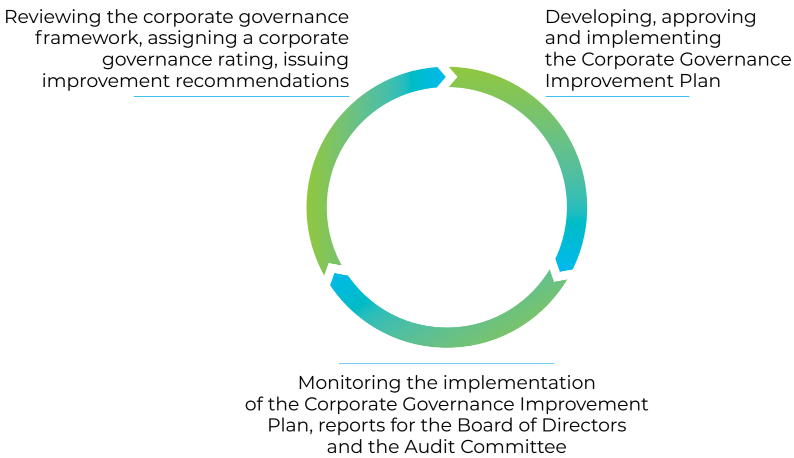
Following the 2021 independent review of the Company's corporate governance by PricewaterhouseCoopers in line with the Methodology, KMG was assigned a "BBB" corporate governance rating (upward revision from the "BB" rating assigned in 2018), which testifies to the Company's progress in developing its corporate governance framework, ensuring its compliance in all material respects with most established criteria, and providing sufficient evidence to demonstrate its efficiency.

In 2022, KMG will focus on consistently implementing recommendations presented by the independent consultant following the 2021 corporate governance review and included in the Corporate Governance Improvement Plan, to further enhance its corporate governance practices across such areas as transparency, shareholder rights, risk management, internal control and audit, performance of the Board of Directors and the executive body, and sustainable development.
In accordance with the established practice, the Corporate Secretary will monitor the progress based on the Corporate Governance Improvement Plan on a regular basis, with progress reports to be reviewed by the Audit Committee and the Board of Directors and feedback provided to KMG's management.

In addition, the Fund's and KMG's Development Strategies until 2031 outline the milestones for the ambitious targets established by the "Corporate Governance Rating" KPI. These efforts demonstrate the increased focus on corporate governance shown by KMG's major shareholder, Board of Directors, Audit Committee and management.

In general, the Company's efforts to improve its corporate governance are continuous and cyclic, and the key milestone of the process is assigning a rating and issuing respective improvement recommendations by an independent party.

Development of coporate governance system



BOARD OF DIRECTORS

The Board of Directors is responsible for the overall management of KMG's activities. Resolutions of the Board of Directors are adopted in line with the procedure set forth in the applicable laws and KMG's Charter. Even though the applicable laws and KMG's Charter allow the Board of Directors to adopt resolutions as long as a quorum is achieved and a certain majority of votes is cast in favour, KMG endeavours to have the most important resolutions adopted at meetings held in person and to have all Board members take part in the voting. KMG makes every effort to prepare such resolutions through preliminary consultations and to have such issues approved by a qualified majority vote, ensuring that the perspectives of independent directors are taken into account.

In addition, the Board of Directors determines KMG's business priorities and approves its Development Strategy; considers and makes resolutions on potential acquisitions and other significant financial issues, including the terms of bonds and derivatives issued by KMG; approves major and interested party transactions; approves acquisitions and transfers (assignments) of subsoil use rights; approves conclusion of partnership contracts (agreements) with strategic partners for joint implementation of subsoil use projects; approves investment projects funded by KMG or its subsidiaries; reviews the results of independent analysis of KMG's corporate governance framework; and approves a corporate governance improvement plan.

The Company's Board of Directors is guided by the Company's Charter, Corporate Governance Code and Regulations on the Board of Directors and follows the annual activity plan and meeting schedule, taking a rational and efficient approach. The Board of Directors can also review matters beyond its activity plan, if necessary.

Chairman of the Board of Directors and his role

Chairman of the Board of Directors is responsible for providing overall leadership for the Board of Directors, ensuring that the Board of Directors fully and effectively fulfils its main roles and builds a constructive dialogue between Board members, major shareholders and the Management Board. The Chairman of the Board of Directors is an independent director.

Independent directors and their role

Independent directors play a significant part in the activities of the Board of Directors – they represent the majority of Board Committee members and chair the Committees. Independent directors meet all statutory independence criteria, as well as the requirements of the Guidelines on Forming Boards of Directors at Companies of JSC Samruk-Kazyna and the Code.

According to the Corporate Governance Code, an independent director is a person with professional expertise and independence sufficient to have their own opinions and make fair unbiased judgements that are not influenced by the Company's shareholders, executive body or other stakeholders. Independent directors shall take active part in discussions of issues involving potential conflicts of interest (preparing financial and non-financial reporting, making interested-party transactions, nominating candidates to the executive body, setting remuneration for members of the executive body). An independent director shall monitor any circumstances which may lead to a potential loss of their independence and notify the Chairman of the Board of Directors in advance if they arise. If any circumstances affecting the independence of a member of the Board of Directors arise, the Chairman of the Board of Directors shall immediately inform the shareholders accordingly in order to make a relevant decision.

In line with global best practices, the Company seeks to ensure that its independent directors meet high standards, and hereby declares that there are no other circumstances which are likely to impair, or could appear to impair, its directors' independence.

Succession planning for the Board of Directors, induction and development

The Company developed and adopted the Succession Policy and Succession Plan for Members of KMG's Board of Directors. Following the corporate governance review performed at KMG in 2021, the independent consultant PricewaterhouseCoopers LLP issued a number of recommendations regarding the succession planning for members of KMG's Board of Directors, which are planned to be implemented in 2022.
The Corporate Governance Improvement Plan for KMG presented by PwC includes the following recommendations:

- consider extending the term of shareholder representatives and independent directors on the Company's Board of Directors and discussing this with the Shareholder.
  It is necessary to look into aligning the term of shareholder representatives on the Board of Directors with the Company's Strategy horizon to secure the Company's advantages associated with the continuity of corporate memory and the Company's reputation

amongst the investment community, if the Company has plans to be listed on international stock exchanges;
- consider developing a formalised succession plan for the Board of Directors, including a list of candidates, their expertise, potential interest in appointment, preferred remuneration and potential tenure based on the tenure of current directors and the required skills matrix.

KMG has in place an Induction Programme for New Members of its Board of Directors (the "Programme") approved by the Board of Directors in 2017. In June 2020, the Board of Directors resolved to supplement the Programme with the requirement to hold meetings with heads of the Company's functional units, as well as meetings with Board Committee chairs. The Corporate Secretary monitors the Programme implementation, i.e. the actual completion of all relevant procedures by new members of the Board of Directors. The Programme regulations are updated on an ongoing basis. In 2021, newly elected members of KMG's Board of Directors Bolat Akchulakov and Mukhtar Tazhigaliyev completed the induction course under the Programme.

The 2021 Training Plan for Members of KMG's Board of Directors was approved in April 2021. Furthermore, members of the Board of Directors continuously improve their qualifications and provide information about completed trainings to be posted on the Company's website.

Term of office

Members of the Board of Directors are elected for a three-year term. Through a special consideration procedure, a member of the Board of Directors with a six-year continuous tenure may be re-elected for a new term, in each case considering the need for the Board to be effectively refreshed. As an exception, a member of the Board of Directors with a nine-year tenure may be re-elected (for independent directors, a detailed and compelling case needs to be prepared, to be disclosed by the Company to all stakeholders).

Following an independent corporate governance review conducted in 2021, the Company received a recommendation to consider extending the term of shareholder representatives and independent directors on the Company's Board of Directors and discussing this with the Shareholder. Another recommendation was to look into aligning the term of shareholder representatives on the Board of Directors with the Company's Strategy horizon. In view of the independent consultant, these steps would benefit the Company, with individual directors' tenure of five to six years and their rotation in different years ensuring continuity of knowledge over the Company's operations and its corporate governance processes. Longer tenure on the Board of Directors helps to improve directors' performance and accountably for the Company's progress based on its strategy.

Membership of the Board of Directors

KMG complies with the Code standards requiring that up to 50% of the Board members should be independent directors.

By resolution of the Management Board of JSC Samruk-Kazyna dated 17 August 2020 (Minutes No. 30/20), a new composition of the Board of Directors was elected, with three independent directors out of the total seven. The Chairman of the Board of Directors is an independent director.

Composition of the Board of Directors from 1 January 2021 to 6 April 2022

	2021	to 6 April 2022	Term expired
Independent directors			
• Christopher Walton, Chairman	3d term	3d term	
• Philip Holland	1st term	1st term	
• Timothy Miller	1st term	1st term	
Representatives of JSC Samruk-Kazyna			
• Uzakbay Karabalin	3rd term	3rd term	
• Yernar Zhanadil	—	1st term	
• Gibrat Auganov	—	1st term	
○ Almasadam Satkaliyev	1st term		March 2021
○ Mukhtar Mankeyev	1st term		February 2022
○ Mukhtar Tazhigaliyev	1st term		February 2022
Executive director (Chairman of the Management Board)			
• Alik Aidarbayev	1st term	1st term	

Composition of the Board of Directors as at 31 December 2021

		Membership since
Independent directors	Christopher Walton, Chairman	2014
	Philip Holland	2020
	Timothy Miller	2020
JSC Samruk-Kazyna representatives	Uzakbay Karabalin	2016
	Mukhtar Mankeyev	2021
	Bolat Akchulakov	2021
Executive director (Chairman of the Management Board)	Alik Aidarbayev	2018

Composition of the Board of Directors as at the time of the 2021 Annual Report approval (6 April 2022)

		Membership since
Independent directors	Christopher Walton, Chairman	2014
	Philip Holland	2020
	Timothy Miller	2020
JSC Samruk-Kazyna representatives	Uzakbay Karabalin	2016
	Yernar Zhanadil	2022
	Gibrat Auganov	2022
Executive director (Chairman of the Management Board)	Alik Aidarbayev	2018

As at 31 December 2021, the Board had seven members, including:

Independent directors: three

JSC Samruk-Kazyna representatives: three

Independent directors

The Board of Directors' breakdown by age:

- 30 to 50 years: two directors;
- 50 to 60 years: one director;
- 60 to 75 years: four directors.

THE AVERAGE AGE OF BOARD MEMBERS IS

56 YEARS

In 2019, the Board had nine members, whose tenure expired in 28 June 2020. On 17 August 2020, JSC Samruk-Kazyna determined KMG's Board of Directors to consist of seven members. On 26 April 2021, the powers of members of KMG's Board of Directors Almasadam Satkaliyev and Anthony Espina were terminated early by the resolution of the Management Board of JSC Samruk-Kazyna, with simultaneous election of representatives of JSC Samruk-Kazyna Bolat Akchulakov and Mukhtar Tazhigaliyev as new KMG's Board members. Further on, the powers of Mukhtar Tazhigaliyev were terminated early by the resolution of JSC Samruk-Kazyna on 30 December 2021, with the election of Mukhtar Mankeyev as a new KMG's Board member. On 18 February 2022, the powers of Mukhtar Mankeyev and Bolat Akchulakov were terminated by Resolution No. 12/22 of the Management Board of JSC Samruk-Kazyna, with simultaneous election of representatives of JSC Samruk-Kazyna Yernar Zhanadil and Gibrat Auganov as new KMG's Board members.

At its meeting on 18 May 2021 (Minutes No. 7/2021), KMG's Board of Directors elected new[1] composition of Nomination and Remuneration Committee, and Strategy and Portfolio Management Committee.

The procedure for nominating and selecting candidates to the Board of Directors is set out in KMG's Charter and other regulatory documents. Board members are elected by the General Meeting of Shareholders, supported by the Chairman of the Board of Directors and the Nomination and Remuneration Committee chair. The recruitment and hiring process is driven by transparency, impartiality, and meritocracy.

Members of the Board of Directors are elected from the candidates nominated as representatives of shareholders and other entities. Candidates to the Board of Directors are expected to possess the knowledge, skills and experience required to perform their functions and support the creation of KMG's long-term business value and sustainable growth, as well as to have an impeccable business reputation.

The Chairman of the Board of Directors is elected by the General Meeting of Shareholders.

Independent directors are elected in accordance with the Guidelines on Forming Boards of Directors at Companies of JSC Samruk-Kazyna, approved by the resolution of the Management Board of JSC Samruk-Kazyna dated 26 September 2016 (Minutes No. 35/16).

Breakdown of the Board of Directors by expertise

Member of the Board of Directors	Key areas of expertise
Christopher Walton	Transport, oil & gas, strategy, finance, corporate governance, IPO experience
Alik Aidarbayev	Oil & gas
Philip Holland	Oil & gas, project assessment, occupational health and safety
Timothy Miller	Oil & gas, risk management, occupational health and safety
Uzakbay Karabalin	Oil & gas, strategy
Gibrat Auganov[2]	Oil & gas, economics, HR
Yernar Zhanadil	Finance, economics, investments

KMG believes that the Board of Directors is well-balanced across all areas in terms of its skills and expertise.

[1] On 2 February 2022, KMG's Board of Directors elected new composition of Audit Committee, Nomination and Remuneration Committee, and Strategy and Portfolio Management

[2] Gibrat Auganov and Yernar Zhanadil were introduced to the Board of Directors f KMG by the decision of the Management Board of Samruk-Kazyna JSC dated February 18, 2022 No. 12/22.

Christopher Walton
Chairman of the Board of Directors,
Independent Director

Alik Aidarbayev
Chairman of the Management Board,
executive director

Uzakbay Karabalin
Representative of JSC Samruk-Kazyna

Philip Holland
Independent Director

Timothy Miller
Independent Director

Gibrat Auganov
Representative of JSC Samruk-Kazyna

Yernar Zhanadil
Representative of JSC Samruk-Kazyna

Christopher Walton
Chairman of the Board of Directors, Independent Director

Member of KMG's Board of Directors since 2014.

Date of birth: 19 June 1957.

Education:

- Bachelor of Arts (BA) in Political Science, the University of Western Australia;
- Master of Business Administration (MBA), Finance, the University of Western Australia;
- Fellow of the Royal Aeronautical Society;
- Fellow of the Institute of Directors.

Experience

In addition to his role as Chairman of KMG's Board of Directors, Christopher Walton is Audit Chair of the Submarine Delivery Agency (UK) and a non-executive member of the Royal Navy's National Shipbuilding Strategy Client Board. Pro-bono, Mr Walton is a trustee of the Guild of Freemen of the City of London's Charity.

Prior to that, Christopher Walton was Chairman of the management boards of Asia Resource Minerals PLC (a coal mining company), Goldenport Shipmanagement Ltd. (a marine shipping company), and Lothian Buses (a municipal bus company). He also served as Senior Independent Director and Chairman of the Audit Committee of Rockhopper Exploration PLC (an oil and gas exploration company), Chairman of the Audit Committee of JSC NC Kazakhstan Temir Zholy, and a non-executive member of the Audit and Risk Committee at the Department for Culture, Media and Sport of the United Kingdom. In addition, Mr Walton was a member of the Bank of the England's Regional Economic Advisory Panel (SE England & Anglia) from 2002 to 2005.

As CFO of easyJet PLC, Christopher Walton successfully conducted the company's IPO. He held other senior positions in finance and commerce in major Australian companies – Qantas, Air New Zealand, Australia Post and Australian Airlines. He served in the Australian Army Reserve.

Christopher Walton is a Fellow of the Institute of Directors and the Royal Aeronautical Society.

Joint appointments:

Guild of Freemen of the City of London – Director (charity)

Guild of Freemen of the City of London's Charity – Trustee

Submarine Delivery Agency (a government department) – Non-Executive Director

National Shipbuilding Strategy, the Client Board – independent member

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Alik Aidarbayev
Member of KMG's Board of Directors, Chairman of KMG's Management Board

Member of KMG's Board of Directors since 2018.

Date of birth: 19 May 1963

Education:

- Oil and Gas Fields Development Technology and Complex Mechanisation, Kazakh Polytechnic Institute named after V. I. Lenin.

Experience

Between 1985 and 1995, Alik Aidarbayev worked at Zhetibayneft's Upstream Unit as an operating engineer, at Mangyshlakneft Oil Production Association as Deputy Head of a reservoir pressure maintenance shop, and later at SJSC Yuzhkazneftegas as Head of a reservoir pressure maintenance shop, Head of the Upstream Unit, Deputy CEO and First Vice President.

At different periods, he was CEO of JSC Turgai Petroleum, CEO of JSC Mangistaumunaigaz, Upstream Managing Director at KMG, CEO of JSC KazMunayGas Exploration Production, Akim of the Mangystau Region, First Vice Minister for Investments and Development of the Republic of Kazakhstan, and Deputy Chairman of the Management Board at JSC Samruk-Kazyna.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Uzakbay Karabalin
Member of KMG's Board of Directors, representative of JSC Samruk-Kazyna

Member of KMG's Board of Directors since 2016.

Date of birth: 14 October 1947.

Education:

- Mining Engineering, the Gubkin Russian State University of Oil and Gas;
- Postgraduate programme at the Gubkin Russian State University of Oil and Gas;
- Candidate of Technical Sciences;
- Doctor of Technical Sciences;
- Academician of the National and International Engineering Academies of the Republic of Kazakhstan.

Experience

Uzakbay Karabalin held various positions at Kazneftegazorazvedka's administration office (the South Emba oil and gas prospecting expedition), Kazakh Scientific Research Geological Exploration Oil Institute, Prikaspiygeologiya's regional administration office, the Guryev branch of Kazakh Polytechnic Institute named after V. I. Lenin, the Industry Department of the Administration Office of the President and of the Cabinet of Ministers of the Republic of Kazakhstan.

At different periods, he was Head of the Main Oil and Gas Department at the Ministry of Energy and Mineral Resources of the Republic of Kazakhstan, Deputy Minister of Energy and Fuel Resources of the Republic of Kazakhstan, Deputy Minister of Oil and Gas Industry of the Republic of Kazakhstan, First Vice President and Acting President of CJSC NOGC Kazakhoil, President of CJSC KazTransGas, Vice Minister of Energy and Mineral Resources of the Republic of Kazakhstan, President of KMG, CEO of JSC Mangistaumunaigaz, CEO of the Kazakh Institute of Oil and Gas, Minister of Oil and Gas of the Republic of Kazakhstan, and First Deputy Minister of Energy of the Republic of Kazakhstan.

Uzakbay Karabalin was also Chairman of the Boards of Directors at CJSC KazTransOil, CJSC NC Oil and Gas Transportation, CJSC NC KazMunayGas and JSC KazMunayGas Exploration Production, Chairman of the Coordination Council and Deputy Chairman of KAZENERGY Association, a member of the Supervisory Board at KazRosGas LLP, a member of National Investors' Council under the President of the Republic of Kazakhstan, Chairman of the Board of Directors of the Atyrau University of Oil and Gas, and a member of the Board of Directors (Independent Director) of the Kazakh Institute of Oil and Gas.

Holds 9,655 ordinary shares in JSC KazTransOil.

Philip Holland
Member of KMG's Board of Directors, Independent Director

Member of KMG's Board of Directors since 2020.

Date of birth: 25 December 1954.

Education:

- Bachelor of Science in Civil Engineering, University of Leeds (UK);
- Master of Science in Engineering/ Construction Management, Cranfield Institute of Technology (UK).

Experience

Philip graduated from the University of Leeds in 1976. After working for some time in the United Kingdom and Saudi Arabia, he joined Bechtel Corporation in 1980 and managed major oil and gas projects in a wide range of international locations. In 2004, he joined Shell as Vice President of projects, Shell Global Solutions. In 2009, Philip became Executive Vice President for Downstream Projects in Shell's newly formed projects and technology business. In 2010, he was appointed as Project Director for the Kashagan Phase 2 project in Kazakhstan and subsequently the Shell/ QP Al Karaana petrochemicals project. Since 2013, he has operated as an independent project management consultant.

Philip is the Chairman of the Board of Directors at Velocys PLC, and Non-Executive Director and Chairman of the Safety, Climate and Risks Committee at EnQuest PLC.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Timothy Miller
Member of KMG's Board of Directors, Independent Director

Member of KMG's Board of Directors since 2020.

Date of birth: 13 November 1959.

Education:

- Bachelor of Science, Mechanical Engineering, Texas Tech University (Lubbock, Texas, US).

Experience

From 2000, Timothy Miller was Assistant to the President at Saudi Arabian Texaco, Inc. (Neutral Zone, Kuwait), Texaco Exploration and Production. Between 2003 and 2010, he held various positions at Chevron Corporation: Management Sponsor (San Ramon, California, US), Brazil Country Manager (Rio de Janeiro, Brazil), Senior Vice President of East Kalimantan (Balikpapan, Indonesia).

In 2010, he was appointed CEO of Tengizchevroil LLP (Atyrau, Kazakhstan) and served in this position for five years. In 2015, he returned to Chevron as Eurasia Business Unite Managing Director (Almaty, Kazakhstan). In 2018, after leaving Chevron, he became Eurasia Business Unit Advisor to the Operating Company President at Chevron Corporation (Frisco, Texas, US).

From May 2019 to date, he is Executive Director for the Republic of Kazakhstan and Senior Advisor for Global Operations at Integrated Global Services (IGS) (Richmond, Virginia, US).

Other businesses/positions:

- Board Member at the American Chamber of Commerce in Kazakhstan (2010–2018)
- Board Member at ValvTechnologies, Inc. (Houston, Texas) from 2019, Board Member at Joint Venture PSI-Clough (Almaty, Kazakhstan) from 2020
- Visiting lecturer at a master class on a career in the oil and gas industry as part of KAZENERGY, at the Graduate School of Business at Nazarbayev University, at Narxoz University, at the Mays Business School, Texas A&M University, and at the Kazakh-British Technical University at different periods.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Gibrat Auganov
Member of KMG's Board of Directors, representative of JSC Samruk-Kazyna

Member of KMG's Board of Directors since February 2022.

Date of birth: 6 June 1988.

Education:

- Kazakh Economic University named after. T. Ryskulov, Faculty of "Finance and Accounting", specialty "Finance";
- Taraz State University named after M. Kh. Dulati, specialty "Oil and Gas Business";
- Humanitarian-Technical Academy, specialty "Master of Economics and Business".

Experience:

- Engineer of Labor Planning and Rationing Department of KazMunaiGas Exploration Production JSC, "Engineering Center" Branch;
- Leading specialist of the Labor Remuneration and Rationing Department of JSC "National Company "KazMunayGas";
- Leading specialist of the Labor Remuneration and Rationing Department at "Samruk-Kazyna" Corporate University" Private Institution;
- Leading engineer for labor rationing of the Human Resources Management Department at "KazGerMunay" JV" LLP;
- Deputy Director of the Personnel Management and Remuneration Department of Embamunaigas JSC;
- Director of the Personnel Management and Remuneration Department of Karazhanbasmunai JSC;
- Director of the Human Resources Management Department of "Samruk-Kazyna" JSC;
- Managing Director for Public Relations and Change Management of "Samruk-Kazyna" JSC.

Joint appointments and membership in other boards of directors:

- Member of the Board of Directors of the non-commercial joint-stock company "Caspian University of Technology and Engineering named after Sh. Yessenov".

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Yernar Zhanadil
Member of KMG's Board of Directors, representative of JSC Samruk-Kazyna

Member of KMG's Board of Directors since February 2022.

Date of birth: 15 December 1984.

Education:

- Bachelor of Business Administration, Accounting and Finance, Kazakhstan Institute of Management, Economics and Strategic Research, (KIMEP), Kazakhstan;
- Master's degree, Finance, Manchester Business School, University of Manchester, UK;
- Executive MBA-Global, Joint Program of London Business School and Columbia Business School, UK and USA.

Experience:

- Work at Phillip Morris Kazakhstan, ElitStroy LLP, and PricewaterhouseCoopers, an international audit firm;
- In "Samruk-Kazyna" JSC he headed the internal audit service and held the position of financial controller;
- Managing Director for Economics and Finance / Co-Managing Director – Member of the Management Board, "Samruk-Kazyna" JSC (11.2016-04.2021);
- Managing Director for Investments, Privatization and International Cooperation – Member of the Management Board, "Samruk-Kazyna" JSC (04.2021-01.2022);
- Managing Director for Development and Privatization (01.2022 – till present).

Joint appointments and membership in other boards of directors:

- Chairman of the Board of Directors of JSC "Tau-Ken Samruk» National Mining Company" (since 26.04.2021);
- Member of the Board of Directors of NAC Kazatomprom JSC (since 22.06.2021).

Government awards and honorary titles:

- Member of the Presidential Youth Personnel Reserve, December, 2019.
- International professional certificates: CMA certificate, International Institute of Management Accountants, USA;
- IPMA certificate, International Project Management Association, Switzerland;
- ACCA Certificate, Association of Chartered Certified Accountants, UK;
- Audit License, Chamber of Auditors of Kazakhstan, Kazakhstan.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Board activities during 2021

	The Board of Directors	The Nomination and Remuneration Committee (NRC)	The Strategy and Portfolio Management Committee (SPMC)	The Audit Committee (AC)	The Health, Safety, Environment and Sustainable Development Committee (HSE&SD)
MEETINGS	19	7	5	21	5
Q1	4	1	1	3	1
Q2	6	2	2	8	2
Q3	5	2	1	6	1
Q4	4	2	1	4	1
reviewing ISSUES	328	67	85	133	52
Q1	63	15	13	29	11
Q2	98	22	36	42	18
Q3	74	12	22	32	10
Q4	93	18	14	30	13

Q1 Q2 Q3 Q4

In 2021, the Board of Directors placed particular focus on updating the Company's Development Strategy, ensuring its financial stability, overseeing investment project management and sustainability issues, improving corporate governance, internal audit and risk management, developing management KPIs, and driving digital transformation as well as safety and well-being of employees.

Issues reviewed by the Board of Directors in 2021, by category:

Reports	Strategic issues	Corporate governance issues	Transaction issues
• Report by the Chairman of KMG's Management Board on key changes in KMG's operations • Information on KMG's HSE activities • Information on COVID-19 • Updates on KMG's interim financial and operating results • Information on the status of implementation of KMG Group's investment projects • Reports by Board Committee chairs • Information on the current status of KMG's preparations for an IPO • Report on messages received via the hotline • Report on interested-party transactions entered into by resolution of KMG's Management Board • Quarterly risk report • Follow-up report on resolutions/instructions of the Board of Directors	• Approval of the KMG 2022–2031 Development Strategy • Approval of the updated Consolidated Development Plan of KMG for 2022–2026 • Approval of the KMG 2022–2031 Low-Carbon Development Programme • Approval of KMG's corporate KPIs and their target values • Approval of the organisational structure of KMG's headquarters • Issues related to the implementation of investment projects • Approval of motivational KPI scorecards for KMG managers and KPI targets • Signing of oil procurement agreements and oil products sale and purchase agreements by KMG	• Results of performance self-evaluation of the Board of Directors of JSC NC KazMunayGas in 2020 • Approval of the Board of Directors' and Committees' activity plan, the schedule of meeting of the Board of Directors and its Committees • Making changes to the membership of Board Committees • Approval of the final Progress Report on the Implementation of KMG's 2019–2020 Detailed Corporate Governance Improvement Plan • Shareholder queries regarding the Company's and its officers' actions in 2020 and corresponding responses • Approval of KMG's 2020 Annual Report • Approval of KMG's 2020 Sustainability Report	• Approval of interested-party transactions • Approval of major transactions

Issues related to subsidiaries and associates	Approval of internal regulations	Appointment and compensation	Issues related to divisions of the Board of Directors
• Election and termination of powers of managers, members of supervisory boards of subsidiaries and associates • Amending articles of association of subsidiaries and associates • Approval of subsidiaries' and associates' corporate KPIs • Acquisition and disposal of stakes in subsidiaries and associates	• Approval and cancellation of KMG's internal regulations	• Approval of KMG's headcount • Early termination of powers and election of members of KMG's Management Board; determining the salaries payable to members of KMG's Management Board, their working conditions, applicable bonuses and social support • Progress on KMG's HR Policy	• Report by the Corporate Secretary Office, Compliance Service, Internal Audit Service and the ombudsman • Approval of Activity Plans of the Compliance Service, Internal Audit Service and the ombudsman • HR issues related to the Corporate Secretary Office, Internal Audit Service, Compliance Service and the Ombudsman • Approval of the Strategy of KMG's Internal Audit Service

Strategic sessions in 2021

In 2021, the Board of Directors held two strategic sessions.

As part of the scheduled session held on 28 May 2021, the Board approved a vision for KMG's 2022–2031 Development Strategy and approaches to building a low-carbon development programme. The Board was advised that the Company developed its draft financial strategy as per the instruction of the Fund, and also reviewed the need to designate a number of initiatives as social projects. Also members of the Board of Directors supported maintaining KMG's profile as an oil and gas company, albeit with due regard to environmental issues.

On 3 November 2021, the Board of Directors held its second strategic session to review and approve KMG's Development Strategy for 2022–2031 taking into account the comments and recommendations expressed at its strategic session on 28 May 2021 (Minutes No. 8/2021). As part of his welcome remarks, the Chairman of the Board of Directors highlighted the significant upcoming changes, including KMG's intention to hold an IPO and the changes associated with the energy transition and focus on issues related to climate change. The Board members also had a detailed discussion of KMG's Strategy for 2022–2031 and Low-Carbon Development Programme for 2021–2031.

Board of Directors' meeting on sustainability issues

On 7 June 2021, the Board of Directors held its annual meeting on sustainable development and discussed the following important matters:

- approval of KMG's 2020 Sustainability Report;
- implementation of priority sustainable development goals at KMG, low-carbon development programme.

Follow-up on KMG's key issues

To oversee the implementation of KMG's strategic initiatives and ensure timely corrective actions, KMG's Board of Directors requires the Chairman of KMG's Management Board to report regularly on key changes in the Group's operations and give other updates on HSE issues, interim financial and operating results, COVID-related developments, interested-party transactions approved by the Management Board, progress on implementation of the Group's strategy, KPIs achievement, investment projects implementation, as well as follow-up reports on KMG's consolidated Development Plan, risk reports, reports from the Board Committee chairs, follow-up reports on resolutions of the Board of Directors, and performance reports submitted by units reporting to the Board of Directors.

At every meeting, the Board of Directors' Strategy and Portfolio Management Committee considers and discusses progress reports on major oil and gas projects (Kashagan, Karachaganak and Tengiz), as well as on transformation and privatisation programmes.

Actual attendance by Board members at Board and Committee meetings in 2021[1]

Member of the Board of Directors	Board and Committee meetings in 2021				
	Board of Directors	Audit Committee	Nomination and Remuneration Committee	Strategy and Portfolio Management Committee	Health, Safety, Environment and Sustainable Development Committee
Christopher Walton	19/19	21/21	7/7	5/5	5/5
Uzakbay Karabalin	18/19	-	-	5/5	5/5
Almasadam Satkaliyev[2]	5/5	-	-	-	-
Anthony Espina	5/5	-	2/2	2/2	-
Alik Aidarbayev	19/19	-	-	-	-
Philip Holland	19/19	21/21	7/7	5/5	-
Timothy Miller	19/19	21/21	-	5/5	5/5
Bolat Akchulakov[3]	14/14	-	-	3/3	-
Mukhtar Tazhigaliyev	14/14	-	5/5	-	-

[1] Note: The first figure shows the number of meetings attended by a member of the Board of Directors, and the second figure is the total number of meetings they were entitled to attend.

[2] Stepped down from KMG's Board of Directors on 26 April 2021.

[3] Elected to KMG's Board of Directors on 26 April 2021.

Performance evaluation of the Board of Directors

In accordance with the Code, the Board of Directors, its committees and members of the Board of Directors should be evaluated every year as part of a structured process approved by the Board of Directors. The process needs to be in line with JSC Samruk-Kazyna's relevant methodology.

In addition, at least once every three years the performance evaluation process is run with the involvement of an independent professional organisation.

In 2021, eleven portfolio companies of JSC Samruk-Kazyna, including KMG, were subject to an independent corporate governance review for the period from 1 January 2020 to 31 May 2021 conducted by PricewaterhouseCoopers LLP. The review assessed corporate governance in the following five areas: performance of the Board of Directors and the executive body; risk management, internal control and audit; sustainable development; shareholders' rights; and transparency. For this reason, no separate independent evaluation of the Board of Directors' performance was conducted in 2021.

In accordance with the Code's requirements, in 2021, members of the Board of Directors conducted a self-evaluation through questionnaires about their performance in 2020. The self-evaluation questionnaire was developed by the Chairman of the Nomination and Remuneration Committee in cooperation with the Chairman of the Board of Directors. The questionnaire comprised two sections (Composition and Processes, Behaviour and Actions) and featured 30 questions. The self-evaluation results were previewed by the Nomination and Remuneration Committee, which recommended that the Chairman of the Board of Directors together with the Chairman of the Nomination and Remuneration Committee discuss the following aspects as part of the Board of Directors meeting when discussing the results of the self-evaluation of the Board of Directors' performance in 2020:

1. appointment of the Chairman of the Audit Committee of KMG's Board of Directors;
2. diversity in all aspects;
3. succession plan and procedure for electing members of the Board of Directors;
4. KMG's strategy;
5. professional development and training.

The report on self-evaluation of the Board of Directors' performance in 2020 (the "Report) was presented and discussed at a closed meeting of the Board of Directors attended only by members of the Board of Directors and the Corporate Secretary.

The discussion included an analysis of the Board members' self-evaluation results and a review of the skills and competencies scored below four points (out of a maximum of five). Furthermore, the Board of Directors developed a Plan to Improve the Board of Directors' Performance (the "Plan") to enhance the quality of its work across the areas for improvement and also reviewed progress in implementing the previously adopted Plan.

In November 2021, the Nomination and Remuneration Committee reviewed the issue of the Board of Directors' 2021 performance evaluation. As part of the committee meeting, the Chairman of the Board of Directors advised of the completed independent review of corporate governance at KMG, which also included the evaluation of the Board of Directors' performance, but suggested that the Board members also conduct self-evaluation of their 2021 performance. The purpose of the annual self-evaluation is to identify any changes in questionnaires completed by members of the Board of Directors. The KMG Board of Directors decided to evaluate its 2021 performance through self-evaluation with a view to identifying areas for improvement and comparing the results with the self-evaluation scores obtained earlier.

The process of evaluating the 2021 performance of the Board of Directors, Board Committees, Board members, and the Corporate Secretary by means of self-evaluation is expected to be completed in Q1 2022. With this in mind, the Board of Directors will further discuss improvements to its activities.

Corporate Secretary

The Corporate Secretary's main role is ensuring regular communication between KMG and its shareholders as well as between shareholders and the Board of Directors, the Internal Audit Service, the Compliance Service, the Ombudsman, the Management Board and other bodies within KMG.

The Corporate Secretary's responsibilities include providing full support to the Board of Directors and its Committees, assisting shareholders in making timely, high-quality corporate decisions; acting as an adviser to the Board members on any matter related to their roles or the applicability of the Code's provisions, and monitoring the implementation of the Code.

The Corporate Secretary is responsible for improving corporate governance practices at KMG. The Corporate Secretary is a Company employee acting independently and reporting to the Board of Directors.

Damir Sharipov

Nationality: Republic of Kazakhstan

Date of birth: 22 January 1980

Education:

- Al-Farabi Kazakh National University (International Relations Department), majoring in international law;
- Russian Presidential Academy of National Economy and Public Administration, MBA programme, majoring in Management;
- Certified Corporate Secretary, certified trainer in corporate governance for corporate secretaries, trainer at Samruk-Kazyna Corporate University.

Experience

Between 2001 and 2007, he held various jobs working at the Tengiz field in the Atyrau Region. From 2007 to 2012, he worked at JSC Development Bank of Kazakhstan, and from 2012 to 2014, he served in different capacities at KMG and JSC KazTransGas.

Since 5 January 2015, he has been Corporate Secretary at KMG.

On 1 February 2019, Damir Sharipov was elected to the Corporate Secretaries Committee of the National Council for Corporate Governance at the Presidium of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken".

Committees of the Board of Directors

Members of the Board of Directors involved in the activities of Board Committees focus on in-depth review and analysis of interrelated functions, issues and areas. Committee meetings involve invited experts, business leaders, and other stakeholders. Committees make recommendations to the Board of Directors to support its decision making. The Board Committees are made up of non-executive directors, and the majority of members are independent directors. The Committees are chaired by independent directors.

Roles and responsibilities of the Board Committees

Committee	Responsibilities
Strategy and Portfolio Management Committee	The Committee assists the Board of Directors by considering and making recommendations on: • the development strategy and investment policy, including priority areas; • improving investment attractiveness; • effective financial and business planning at KMG; • monitoring KMG's transformation.
Nomination and Remuneration Committee	The Committee assists the Board of Directors by considering and making recommendations on: • succession planning for the Board of Directors and Management Board; • conducting ongoing, objective performance evaluations of the Board of Directors, Management Board, Corporate Secretary, and other employees; • pursuing effective HR, pay and remuneration policies, and providing professional development and training opportunities for KMG officers and employees.
Audit Committee	The Committee assists the Board of Directors by considering and making recommendations on: • implementing effective controls over KMG's financial and business operations; • monitoring the reliability and effectiveness of internal controls and risk management, as well as the implementation of corporate governance regulations; • overseeing the external and internal audit functions; • reviewing the Company's annual and quarterly financial statements; • monitoring KMG's compliance arrangements.
Health, Safety, Environment and Sustainable Development Committee	The Committee assists the Board of Directors by considering and making recommendations on: • ensuring HSE compliance; • embedding sustainability in strategic planning and social and economic development at KMG; • KMG's social commitments and programmes under subsoil use contracts; • monitoring KMG's environmental performance.

NOMINATION AND REMUNERATION COMMITTEE

Statement by the Chairman of the Nomination and Remuneration Committee

IN 2021 THE NOMINATION AND REMUNERATION COMMITTEE HELD

7 MEETINGS AND REVIEWED

67 ISSUES

In 2021, the Committee focused on pursuing effective HR, payment and remuneration policies, succession planning, providing social support and harmonising the corporate culture across the Company. The Committee regularly looked into the progress of the MANSAP project to develop a Succession Plan for Key Positions within KMG Group. In addition, the Committee developed and approved the KMG Board of Directors Succession Planning Policy and the Board of Directors Succession Plan.

The discussions of KMG's new Strategy for 2022–2031 highlighted changes in KMG operations with an increasing focus on the development of renewable energy sources, which requires relevant changes both to the Company's structure and corporate culture. This means that the Company needs to build a pool of employees capable of delivering high performance while responding effectively to external challenges. The goal is to shift to prioritising human capital over resources.

In addition, in the reporting period, the Committee actively engaged with the Company's management in discussing social issues, including structural reorganisation, compensation and remuneration, as well as mitigation of KMG's reputational risks. While reviewing the report on the implementation of KMG's HR Policy, the Committee members discussed regional social tensions and strategies to address them. Furthermore, the Committee participated in discussing the HR unit's workstreams, including the system of efficient personnel management, the headcount management programme, relations with contractors and the succession plan.

The Committee seeks to make consistent and balanced decisions with a view to maintaining social stability at the Company, which remains the Committee's primary focus.

Philip Holland
Chairman of the Nomination and Remuneration Committee, Independent Director

Members as at 31 December 2021:
1. Philip Holland – Chairman of the Committee since September 2020
2. Christopher Walton – member of the Committee since August 2017
3. Mukhtar Tazhigaliyev – member of the Committee since May 2021

Personnel management is essential to the Company's operational efficiency. The Nomination and Remuneration Committee makes recommendations to the Board of Directors on the matters within its remit relating to the appointment, remuneration, training and development of the Company employees. The key appointment principles require that candidates possess strong qualifications to perform their roles successfully and have the skills needed to pursue the Company's strategic goals in their area of responsibility.

Key issues reviewed by the Nomination and Remuneration Committee in 2021

Succession planning	• Approval of the list of employees included in KMG Group's succession/talent pool for key A pool positions • KMG Board of Directors Succession Planning Policy and Board of Directors Succession Plan • Early termination of powers of a member of KMG's Management Board and defining the number of KMG's Management Board members • Progress in creating individual development plans for the employees enlisted in the succession/talent pool for KMG Group's key A pool positions with reliance on a permanent mentorship programme for successors • Progress in implementing the MANSAP project to develop a Succession Plan for Key Positions within KMG Group • Election (appointment) of the CEO of MNC KazMunayTeniz LLP • Appointment of the CEO (Chairman of the Management Board) of NMSC Kazmortransflot LLP • Approval of individual development plans and the Leadership Training Programme – a successor development programme for key A pool positions within KMG Group • Election of members and Chairman of the Supervisory Board of KMG Engineering LLP
Ongoing and effective performance evaluation	• Results of performance self-evaluation of KMG's Board of Directors in 2020 • Performance self-evaluation of KMG's Board of Directors in 2021 • Approval of a motivational KPI scorecard and KPI targets for KMG's Ombudsman for 2021 • Approval of a motivational KPI scorecard and KPI targets for the Head of KMG's Compliance Service for 2021 • Approval of a motivational KPI scorecard and KPI targets for KMG's Corporate Secretary for 2021 • Approval of the questionnaire for the members of KMG's Board of Directors to evaluate the performance of KMG's Corporate Secretary • Approval of actual performance against corporate KPIs and motivational KPI scorecards for KMG executives in 2020 • Approval of a motivational KPI scorecard and KPI targets for KMG's Corporate Secretary for 2022 • Approval of KMG's corporate KPIs as well as motivational KPI scorecards and KPI targets for KMG's executives for 2022 • Approval of actual performance against corporate KPIs of KMG Engineering LLP/motivational KPIs for the CEO (Chairman of the Management Board) of KMG Engineering LLP in 2020
Maintenance of an effective HR policy and an effective pay and remuneration framework	• On Corporate Secretary of KMG • Results of the human resources management audit • Approval of the staff list and the salary grid for KMG's Corporate Secretary Office employees • Early termination of the powers of KMG's Ombudsman, appointment of a new Ombudsman, determining tenure, salary, remuneration terms and social benefits • Harmonisation of KMG Group's corporate culture • Determining the salary payable to the Chairman of KMG's Management Board • Revised qualification requirements for the Chairman of KMG's Management Board and nominees for the Chairman of KMG's Management Board • Determining the salary, remuneration terms, bonuses and social benefits payable to the Chairman of KMG's Management Board • Report on the progress in implementing KMG's HR Policy

Attendance of the Committee's meetings by its members in 2021

Meeting No. and date		Length of meeting		Philip Holland	Christopher Walton	Anthony Espina	Mukhtar Tazhigaliyev
1/2021	09.02	14:02–15:06	64 minutes	+	+	+	+
2/2021	06.04	13:56–15:23	79 minutes	+	+	+	+
3/2021	08.06	14:10–15:59	169 minutes	+	+	Resigned from the Committee	+
4/2021	07.09	13:59–15:15	64 minutes	+	+		+
5/2021	27.09	16:00–16:30	30 minutes	+	+		+
6/2021	02.11	14:02–15:53	111 minutes	+	+		+
7/2021	07.12	14:00–15:00	60 minutes	+	+		+
Participation, %				100%	100%	100%	100%

STRATEGY AND PORTFOLIO MANAGEMENT COMMITTEE

Statement by the Chairman of the Strategy and Portfolio Management Committee

IN 2021, THE STRATEGY AND PORTFOLIO MANAGEMENT COMMITTEE HELD

5 MEETINGS AND REVIEWED

85 ISSUES

In 2021, the Committee's areas of focus included updating KMG's Development Strategy and considering measures to minimise the Company's risks associated with the introduction of a carbon tax on EU imports, in particular by finding optimal sales channels for KMG's products. The Committee actively reviewed issues related to the Company's investment activities and management of its assets, including those in the renewable energy sources sector.

The Committee paid special attention to discussing oil and gas chemistry projects, as well as the status of the transfer of JSC KazTransGas to JSC Samruk-Kazyna and the impact of this transaction on KMG in the run-up to KMG's IPO. Ahead of the planned IPO, the Committee repeatedly reviewed a number of designated social projects (including reconstruction of the trunk water pipeline and construction of a desalination plant, as well as the construction of a gas processing plant project in Zhanaozen) and sources of funding for such projects.

Also, the Committee was monitoring the implementation of KMG's Digital Transformation Programme by closely reviewing the reports of the Transformation and Digitalisation Department along with interactions with JSC Samruk-Kazyna, and supporting the implementation of JSC Samruk-Kazyna's proposals on amending KMG's Charter to expand the Board of Directors' expertise in transformation matters.

At every meeting, the Committee heard progress reports on major fields such as Kashagan, Karachaganak and Tengiz, as well as status reports on privatisation and divestment programmes. At its last meeting, the Committee decided to also hear progress reports on construction and commissioning of petrochemical facilities on a regular basis.

Given the importance of KMG's credit ratings and the need to develop a clear vision for the Company's efforts to improve the ratings and maintain them at an acceptable level, the Committee heard and discussed the report on KMG's credit rating.

KMG is a national oil and gas company carrying out its operations in line with the strategies of the Republic of Kazakhstan and JSC Samruk-Kazyna. With this in mind, the Committee seeks to make consistent and balanced decisions aimed at implementing KMG's Development Strategy.

Philip Holland
Chairman of the Nomination and Remuneration Committee, Independent Director

Members as at 31 December 2021:

1. Philip Holland – Chairman of the Committee since September 2020
2. Christopher Walton – member of the Committee since August 2017
3. Uzakbay Karabalin – member of the Committee since August 2017
4. Timothy Miller – member of the Committee since September 2020
5. Bolat Akchulakov – member of the Committee since May 2021

Key issues reviewed by the Strategy and Portfolio Management Committee in 2021

Development strategy, including priority areas	• 2020 report on the implementation of KMG's Development Strategy until 2028 • 1H 2021 report on the implementation of KMG's Development Strategy until 2028 • Roll-out of a project management system (PMS) and portfolio investment management at KMG • Impact on KMG's activities of the introduction of a carbon tax on EU imports in 2022 and measures to minimise the risks prevent possible negative implications for KMG including finding optimal sales channels for KMG's products • Status report on KMG's initiatives to increase reserves (including exploration projects) • KMG's entering into an interested-party transaction (Basic terms of cooperation for the integrated gas chemical complex construction project in the Atyrau Region (Phase 1 – polypropylene production, Phase 2 – polyethylene production)) between KMG, JSC Samruk-Kazyna and SIBUR
Investment case improvement	• Entering into a hydrocarbon exploration and production contract for the Al-Farabi subsoil area in the Kazakhstani sector of the Caspian Sea between the Ministry of Energy of the Republic of Kazakhstan and KMG, and approval of the Al-Farabi investment project • Progress in implementing KMG Group's investment projects in 2020 • Sale of KMG International N.V.'s 100% stake in the authorised capital of KMG Engineering LLP • Disposal of KMG's 49.99% stake in the authorised capital of Al-Farabi Operating LLP in favour of LUKOIL, and KMG's entering into interested-party transactions • Approval of adjusting the cost and timeline of the investment project to construct the Beineu–Bozoi–Shymkent gas pipeline (following the acquisition of Aral, Korkyt-Ata, Turkestan and 1A compressor stations from JSC Intergas Central Asia). The project envisages a total investment by Beineu-Shymkent Gas Pipeline LLP exceeding an equivalent of one hundred and ten million US dollars (USD 110,000,000) in tenge at the exchange rate set in the macroeconomic forecast (baseline scenario) for the relevant period
Effective financial and business planning	• KMG's entering into an interested-party transaction Agreement on Suspension of Terms between JSC Caspian Pipeline Consortium-K, KMG and other shareholders of JSC Caspian Pipeline Consortium-K • Progress in implementing the Privatisation and Divestment Programme across KMG Group • Status of transferring JSC KazTransGas to JSC Samruk-Kazyna • Overview of KMG's credit rating • Approval of the Rules for Identifying KMG's Strategic Partners • Acquisition by KMG of a 24.9% stake in the authorised capital of Butadiene LLP from United Chemical Company LLP • KMG's entering into an interested-party transaction (Oil Products Sale and Purchase Agreement between KMG and JSC Karazhanbasmunai)
Monitoring of KMG's transformation	• Current status of the Digital Transformation Programme at KMG and JSC Samruk-Kazyna

Attendance of the Committee's meetings by its members in 2021

Meeting No. and date		Length of meeting		Philip Holland	Christopher Walton	Timothy Miller	Anthony Espina	Uzakbay Karabalin	Bolat Akchulakov
1/2021	10.02	14:53–16:50	123 minutes	+	+	+	+	+	+
2/2021	07.04	15:00–18:09	189 minutes	+	+	+	+	+	+
3/2021	09.06	14:57–18:15	198 minutes	+	+	+	Resigned from the Committee	+	+
4/2021	08.09	15:58–17:59	121 minutes	+	+	+		+	+
5/2021	03.11	15:25–16:36	71 minutes	+	+	+		+	+
Participation, %				100%	100%	100%	100%	100%	100%

AUDIT COMMITTEE

Statement by the Chairman of the Audit Committee

IN 2021, THE AUDIT COMMITTEE HELD

21 MEETINGS

AND REVIEWED

133 ISSUES

In 2021, the Audit Committee continued to monitor the Company's system of internal control, risk management and performance across key functional areas as well as review and challenge, as appropriate, reports and key decisions made by the management. The Audit Committee carried out its work in line with the expectations and functional responsibilities set by the Code and Regulations on the Audit Committee, as well as resolutions of KMG's Board of Directors.

The Committee regularly reviewed the reports from the management and the external auditor on material accounting matters and decisions. These reviews help the Committee members engage in a substantive dialogue on the reliability, balance and clarity of KMG's financial statements.

In 2021, we significantly accelerated the drafting and approval of the Company reporting, including its annual report and financial statements.

Also in 2021, the Committee continued work to improve internal controls and corporate governance. Following an independent review of corporate governance in 2021, KMG's corporate governance rating was upgraded from "BB" in 2018 to "BBB" in 2021. The upgrade testifies to the Company's ability to ensure compliance of its corporate governance framework in all materials respects with most of the set criteria and provide sufficient evidence to demonstrate its efficiency. According to the independent consultant, the current rating is optimal for the Company to hold an IPO.

The Committee will continue its work to increase transparency and efficiency of the Company's operations.

Christopher Walton

Chairman of the Audit Committee, Independent Director

Members as at 31 December 2021:

- Christopher Walton – Chairman of the Committee since September 2020
- Timothy Miller – member of the Committee since September 2020
- Philip Holland – member of the Committee since September 2020

Key issues reviewed by the Audit Committee in 2021

Internal Audit	• Review of the annual report on the Internal Audit Service's performance in 2020 • Review and preliminary approval of quarterly reports on the Internal Audit Service's performance • Approval of the 1H 2020 actual performance of employees of the Internal Audit Service against motivational KPIs • Approval of the Budget Execution Report of the Internal Audit Service for 2020 • Approval of remuneration payable to employees of the Internal Audit Service for 2020 • Review and preliminary approval of the Annual Audit Plan for 2022 • Review and preliminary approval of the budget of the Internal Audit Service for 2022 • Proposals on the structure of the Internal Audit Service, its headcount, tenure of the service head and employees, and termination of their contracts
Accounting and external audit	• Review and discussion with the external auditors of the 2020 audit results • Review and discussion with the external auditors of interim audit results • Discussion with the external auditor of a list of all related services that the external auditor provides (plans to provide) to KMG, and assessing whether these related services affect the auditor's independence • Review and preliminary approval of KMG's interim financial statements • Follow-up on the external auditor's recommendations for 2020 • Preliminary approval of KMG's consolidated financial statements for 2020 and KMG's 2020 net profit distribution • Provision of information on non-audit services provided by KMG's external auditor in the previous year • Preliminary approval of KMG's standalone financial statements for 2020 • Approval of non-audit services provided by KMG Group's external auditor • Items submitted for consideration by KMG's external auditor • Review of KMG's draft Auditor Engagement Policy • Review of progress in preparing for the adoption of accounting changes, including the implementation of IFRS 16 and other IFRS changes
Internal control and risk management	• Progress in implementing the internal control system and business continuity management system at KMG and its subsidiaries • Report on testing of KMG's Comprehensive Business Continuity Plan and the Roadmap to Improve KMG's Comprehensive Business Continuity Plan • KMG's Risk Report for Q1, Q2 and Q3 2021
Corporate governance	• Approval of the Progress Report on the Implementation of KMG's 2019–2020 Detailed Corporate Governance Improvement Plan • Report on compliance with the principles and provisions of KMG's Corporate Governance Code for 2020 • Preliminary approval of KMG's 2020 Annual Report • Shareholder queries regarding the Company's and its officers' actions in 2020 and corresponding responses • Results of KMG's corporate website evaluation
Compliance	• Report on the Compliance Service performance for 2020 • Reports on submissions received via the hotline • Approval of key performance indicators of the Head of the Compliance Service for 2021 • Approval of key performance indicators of the Head of the Compliance Service for 2022
Review of the reports of local authorities (including tax authorities), external and internal auditors and KMG's management on compliance with laws	• Results of the government audit of the effectiveness of asset management at KMG and its selected subordinate organisations, conducted by the Accounts Committee for Control over Execution of the Republican Budget

Attendance of the Committee's meetings by its members in 2021

Meeting No. and date		Length of meeting		Christopher Walton	Philip Holland	Timothy Miller
1/2021	09.02	16:00–18:45	165 minutes	+	+	+
2/2021	04.03	15:00–16:00	60 minutes	+	+	+
3/2021	25.03	16:00–17:00	60 minutes	+	+	+
4/2021	06.04	14:00–17:30	210 minutes	+	+	+
5/2021	16.04	21:30–22:30	60 minutes	+	+	+
6/2021	28.04	21:00–21:30	30 minutes	+	+	+
7/2021	30.04	17:00–17:30	30 minutes	+	+	+
8/2021	18.05	17:00–17:30	30 minutes	+	+	+
9/2021	27.05	20:00–20:30	30 minutes	+	+	+
10/2021	08.06	16:00–18:30	150 minutes	+	+	+
11/2021	23.06	17:00–17:30	30 minutes	+	+	+
12/2021	07.07	18:00–18:20	20 minutes	+	+	+
13/2021	29.07	17:00–17:30	30 minutes	+	+	+
14/2021	09.08	17:00–17:30	30 minutes	+	+	+
15/2021	12.08	15:00–15:30	30 minutes	+	+	+
16/2021	07.09	16:00–18:30	150 minutes	+	+	+
17/2021	17.09	17:00–19:00	120 minutes	+	+	+
18/2021	02.11	16:00–18:30	150 minutes	+	+	+
19/2021	19.11	17:00–18:00	60 minutes	+	+	+
20/2021	03.12	17:00–18:00	60 minutes	+	+	+
21/2021	24.12	17:00–18:00	60 minutes	+	+	+
Participation, %				100%	100%	100%

HEALTH, SAFETY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT COMMITTEE

Statement by the Chairman of the Health, Safety, Environment and Sustainable Development Committee

IN 2021, THE HEALTH, SAFETY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT COMMITTEE HELD

5 MEETINGS AND REVIEWED

52 ISSUES

KMG Group proclaimed 2021 the Year of Environment, using this occasion to raise ecological awareness, reduce environmental impact, and take steps needed to meet new environmental requirements and global trends.

In 2021, the Company managed to reduce emissions by 20% compared to the 2017 level. We keep focusing on proper disposal of waste, including legacy waste, and remediation of contaminated soil. In 2021, Sustainalytics, an independent ratings firm, upgraded KMG's ESG rating, with a score of 72 after 69 in 2020. The Company's ESG risk rating also improved from 34.7 in 2020 to 28.4 in 2021. These improvements moved KMG into the medium-risk range, ranking 16th out of 251 oil and gas companies worldwide. KMG topped, for the fifth consecutive year, the Environmental Transparency Rating of Oil and Gas Companies in Kazakhstan. In the reporting period, KMG was assigned a "B" water security rating for 2020 by the CDP, an improvement from the "C" rating in 2019. KMG and its HSE & SD Committee recognise a global trend for decarbonisation. The Company has set a target to reduce its direct and indirect greenhouse gas emissions by 15% by 2031 (from the 2019 level). This target is part of KMG's Development Strategy and Low-Carbon Development Programme for 2022–2031.

Unfortunately, in 2021, there were some accidents at KMG Group, including fatalities caused by an explosion at Petromidia Refinery and a fire at the Borankol field of KazMunayTeniz LLP. The Company and its HSE & SD Committee paid particular attention to these accidents and will make sure that proper corrective actions are implemented to fully eliminate the underlying root causes.

KMG's Occupational Health and Safety Policy is driven by our senior management setting the tone at the top in occupational health and safety and engaging every employee in building a robust safety culture. Management teams at KMG and its subsidiaries and associates take a zero-tolerance approach to losses and damage caused by accidents (including traffic accidents), emergencies, as well as by the use of alcohol, narcotic drugs, psychotropic and other similar substances.

The Committee introduced the practice of making deep dives into key HSE issues at its meetings. In 2021, it carried out deep dives into five areas, including waste management and implementation of the Memorandum on Legacy

Members as at 31 December 2021:
1. Timothy Miller – Chairman of the Committee since September 2020
2. Christopher Walton – member of the Committee since December 2018
3. Uzakbay Karabalin – member of the Committee since May 2019

Waste Disposal, occupational health and hygiene management system, requirements of the new Environmental Code of the Republic of Kazakhstan, management of KMG contractors and emissions management.

The Committee also consistently reviewed reports on the situation with COVID-19 at KMG and on measures taken across the Group to prevent the spread of the virus.

Achievements and key initiatives of the Company in 2021 across the areas supervised by the HSE & SD Committee:

- On 10 September 2021, the 6th Annual HSE Forum of KMG Group's CEOs "Towards Safe and Sustainable Development" was held. It was attended by members of the Board of Directors and management of KMG, CEOs of subsidiaries and associates, and representatives of JSC Samruk-Kazyna, government agencies and KMG's foreign partners. The purpose of the forum was to assess the current state of occupational health and safety and environmental protection across KMG Group and to exchange experience in employee life and health protection.
- KMG joins Vision Zero, a multinational road traffic safety initiative that aims to achieve zero fatalities or serious injuries on the road.
- Medical examinations and vaccination of KMG employees are carried out on a regular basis, free of charge.

Our priority environmental projects include eliminating legacy pollution and reducing emissions and discharges, as well as implementing the Green Office principles and improving ecological culture and awareness. The Committee seeks to make consistent and balanced decisions that would foster safe and sustainable development.

Timothy Miller

Chairman of the Health, Safety, Environment and Sustainable Development Committee, Independent Director

Key issues reviewed by the Health, Safety, Environment and Sustainable Development Committee in 2021:

Health, Safety and Environment	• Health, safety and environment reports • Waste management and implementation of the Memorandum on Legacy Waste Disposal • Occupational health and hygiene management system • Requirements of the new Environmental Code of the Republic of Kazakhstan • Management of KMG contractors • Emissions management • Reports on the situation with COVID-19 at KMG • Status of the accident at Petromidia Refinery • Results of the investigation into the fire at the diesel fuel and kerosene transshipment station of the Batumi Oil Terminal • Business interruptions at KMG's subsidiaries and associates due to power outages caused by external supplier JSC KEGOC • Approval of KMG Group's Corporate Standard for Assessing the Environmental Impact of Planned Activities • Approval of KMG's updated Environmental Policy and revocation of KMG's Environmental Policy approved by the Resolution of KMG's Board of Directors dated 20 February 2020 (Minutes No. 2/2020)
Sustainable development and ESG ratings	• KMG's ESG (Environmental, Social, Governance) rating • Implementing a sustainability framework across KMG and its business units and embedding sustainability principles into key business processes • Action plan to further improve KMG's ESG rating across a number of metrics with the potential for short and long-term improvement at KMG Group • KMG's contribution to the achievement of sustainable development goals • Expanding the list of documents regulating KMG's internal activities and approval of KMG's Low-Carbon Development Programme for 2022–2031 • Approval of motivational KPI scorecards for KMG executives engaged in advancing sustainable development for 2022
Social responsibility	• KMG Group's social policy and ensuring social stability across KMG Group

Attendance of the Committee's meetings by its members in 2021

Meeting No. and date		Length of meeting		Timothy Miller	Christopher Walton	Uzakbay Karabalin
1/2021	08.02	17:10–18:36	86 minutes	+	+	+
2/2021	05.04	17:00–19:00	120 minutes	+	+	+
3/2021	07.06	17:10–18:55	105 minutes	+	+	+
4/2021	06.09	17:00–18:40	100 minutes	+	+	+
5/2021	01.11	16:52–19:00	128 minutes	+	+	+
Participation, %				100%	100%	100%

MANAGEMENT BOARD PERFORMANCE REPORT

The Management Board's activities are regulated by the Law of the Republic of Kazakhstan On Joint Stock Companies, with due consideration of the specifics established by the Law of the Republic of Kazakhstan for the Sovereign Wealth Fund, KMG's Charter, and the Regulations on the Management Board.
The Management Board may pass resolutions on any matters relating to KMG's operations not referred by regulations of the Republic of Kazakhstan and KMG's Charter to the remit of KMG's other bodies and officials. KMG's Management Board is headed by the Chairman of the Management Board appointed (elected) by the General Meeting of Shareholders. KMG's Board of Directors is responsible for appointing other members of the Management Board.
The most significant matters within the remit of the Management Board are:

- implementing KMG's Development Strategy and KMG's Development Plan
- carrying out KMG's day-to-day financial and business operations, including the execution of the business plan and implementation of investment projects
- implementing sustainability efforts at KMG and its subsidiaries and associates
- monitoring – any conflicts of interest and corporate conflicts and contributing to their settlement
- passing resolutions on matters related to activities of KMG's subsidiaries and associates, other than those reserved exclusively to KMG's Board of Directors pursuant to KMG's Charter
- increasing KMG's liabilities and acquiring or disposing of property in line with the established materiality threshold.

KMG's Management Board is formed by the Board of Directors based on the proposals of the Chairman of the Management Board. As at 31 December 2021, the Management Board comprised eight key executives of KMG. Meetings of the Management Board are held in person and in absentia and are convened as necessary.

In 2021, the Management Board passed 41 resolutions on KMG's interested-party transactions[1].

IN 2021, THE MANAGEMENT BOARD HELD A TOTAL OF

47 MEETINGS

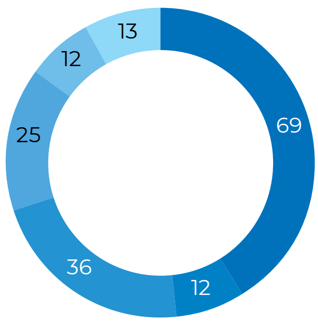
Number of meetings

AND REVIEWED AND PASSED

611 RESOLUTIONS

Number of issues reviewed

167 OUT OF ALL ISSUES ADDRESSED IN THE MANAGEMENT BOARD RESOLUTIONS PASSED AT IN-PERSON MEETINGS IN 2021 WERE SUBMITTED TO THE KMG'S BOARD OF DIRECTORS IN ACCORDANCE WITH THE ESTABLISHED PROCEDURE.



- KMG's internal activities[2]
- Matters reserved exclusively to the general meeting of founders of subsidiaries and associates
- Interested-party transactions
- investment projects exceeding the materiality threshold
- Questions on investment activities in accordance with the corp standard SK
- Reports internal activities[3]

[1] KMG's Charter sets a materiality threshold differentiating whether certain items are to be referred to the Management Board or the Board of Directors.

[2] Key matters of KMG's internal activities concerned stake acquisition and disposal by KMG, amendments to the terms of its Eurobond issue (issues), conclusion of contracts and agreements by KMG, approval of the Development Strategy of JSC NC KazMunayGas for 2022–2031, the consolidated Development Plan of JSC NC KazMunayGas for 2022–2026, the Low-Carbon Development Programme of JSC NC KazMunayGas for 2022–2031, etc.

[3] Reports on risks; interested-party transactions with relevant resolutions passed by the Management Board; implementation of the development strategy until 2028; sustainable development, etc.

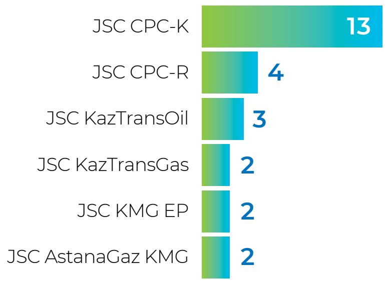
In 2021, the Management Board approved the following internal documents:

- JSC NC KazMunayGas Dividend Policy for Subsidiaries and Associates
- Financial Strategy of JSC NC KazMunayGas until 2028
- Project Management Guidelines for JSC NC KazMunayGas and its Subsidiaries and Associates
- Schedule of Internal Control Activities at JSC NC KazMunayGas for 2021 and for 2022
- JSC NC KazMunayGas Development Plan (standalone) for 2022–2026
- Activity Plan for the Management Board of JSC NC KazMunayGas for 2022
- Budget of JSC NC KazMunayGas for 2022
- 5 regulations
- 24 rules and other internal documents

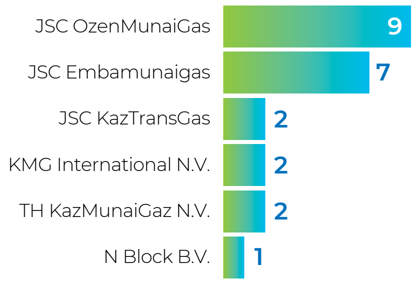
In addition, the Management Board passed 27 resolutions to amend some of KMG's internal documents.

The following resolutions were passed by the Management Board to determine the Company's voting position at the General Meetings of Shareholders (Participants):

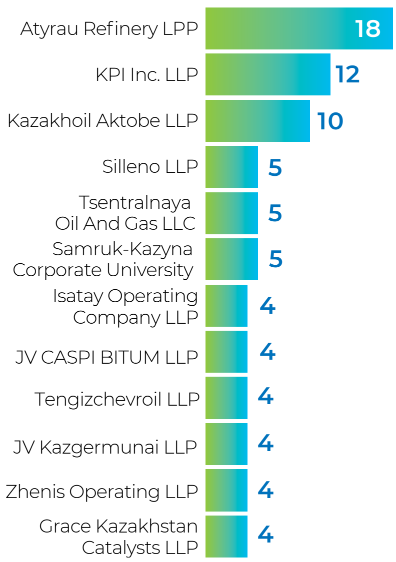
26 resolutions – acting as a shareholder/trustor



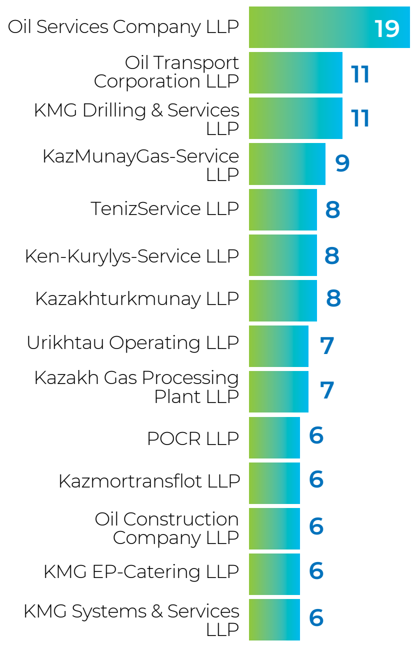
24 resolutions – acting as the sole shareholder / person holding all voting shares in a KMG subsidiary or associate



111 resolutions – acting as a participant / trustee manager of a stake in the authorised capital



200 resolutions – acting as the sole shareholder / founder / person holding 100% in a KMG subsidiary or associate



Membership of the Management Board

Members of the Management Board as at 31 December 2021

Alik Aidarbayev	Chairman of the Management Board
Dauren Karabayev	Deputy Chairman of the Management Board for Economics and Finance
Daniyar Tiyessov	Deputy Chairman of the Management Board for Oil Refining and Petrochemicals
Daniyar Berlibayev	Deputy Chairman of the Management Board for Oil Transportation, International Projects and Construction of the Saryarka trunk gas pipeline
Dastan Abdulgafarov	Deputy Chairman of the Management Board for Strategy, Investment and Business Development
Malik Saulebay	Deputy Chairman of the Management Board
Zhakyp Marabayev[1]	Deputy Chairman of the Management Board for Exploration and Production

Composition of the Management Board as at the time of the 2021 Annual Report approval (6 April 2022)

Alik Aidarbayev	Chairman of the Management Board
Kurmangazy Iskaziyev[2]	Deputy Chairman of the Management Board for Exploration and Production
Dauren Karabayev	Deputy Chairman of the Management Board for Economics and Finance
Daniyar Tiyessov	Deputy Chairman of the Management Board for Oil Refining and Petrochemicals
Daniyar Berlibayev	Deputy Chairman of the Management Board for Oil Transportation, International Projects and Construction of the Saryarka trunk gas pipeline
Dastan Abdulgafarov	Deputy Chairman of the Management Board for Strategy, Investment and Business Development
Malik Saulebay	Deputy Chairman of the Management Board

[1] Membership in the Management Board fo KMG of Zhakyp Marabayev was terminated by a decision of the KMG Board of Directors in accordance with Minutes No. 1/2022 dated February 2, 2022.

[2] Kurmangazy Iskaziyev was appointed to the Management Board by the decision of the KMG Board of Directors dated 6 April 2022.

Alik Aidarbayev
Chairman of KMG's Management Board

Kurmangazy Iskaziyev
Deputy Chairman of the Management Board for Exploration and Production

Dauren Karabayev
Deputy Chairman of the Management Board for Economics and Finance

Daniyar Tiyesov
Deputy Chairman of the Management Board for Oil Refining and Petrochemicals

Daniyar Berlibayev
Deputy Chairman of the Management Board for Oil Transportation, International Projects and Construction of the Saryarka trunk gas pipeline

Dastan Abdulgafarov
Deputy Chairman of the Management Board for Strategy, Investment and Business Development

Malik Saulebay
Deputy Chairman of the Management Board

Alik Aidarbayev
Chairman of KMG's Management Board

A member of the Management Board since 2018; for more details see the Membership of the Board of Directors section.

Kurmangazy Iskaziyev
Deputy Chairman of the Management Board for Exploration and Production

A member of the Management Board since April 2022

Date of birth: 11 May 1965

Education:

- Mining Engineering, Kazakh Polytechnic Institute named after V. I. Lenin
- Candidate of Geological Sciences, Tomsk Polytechnic University
- Doctor of Geological and Mineralogical Sciences, National University of Oil and Gas Gubkin University

Awards and honors:

Laureate of the Al-Farabi State Prize of RK in the field of science and technology, professor of the "Prospecting and Exploration of Oil and Gas" faculty of the Russian State Oil and Gas University named after Gubkin, academician of the Russian Academy of Natural Sciences (RANS).

Awarded with the medal "Kurmet", the budges "Honorary Explorer of the Republic of Kazakhstan" and "Honored Worker of the Oil and Gas Industry of the Republic of Kazakhstan", title "Honorary citizen of Atyrau region".

Experience

In 1985 started his career at Embaneft production association, where subsequently passed all stages of production from Operator to Director General of "Embamunaigas" JSC.

In 2006-2008, worked as a Deputy director for Geology and Development department, Director for Geology and Development department at "KazMunayGas" Exploration Production" JSC.

From 2006 to 2008 worked as a Chief Executive Officer of Oil and Gas Production, Managing director for Geology, Geophysics and Reservoirs, Chief geologist, Deputy Chairman of the Board for Geology and Prospective Projects, Managing director for non-operational assets (Tengiz, Kashagan, Karachaganak), Managing director for Geology at JSC NC KazMunayGas or KMG.

From September 2015 to 2018 – Chief Executive Officer (Chairman of the Management Board) at "Embamunaigas" JSC, Chief Executive Officer (Chairman of the Management Board) at "KazMunayGas" Exploration Production" JSC.

From 2018 to 2020 – Deputy Chairman of the Management Board for Exploration, Production and Oilfield Services at JSC NC KazMunayGas, Deputy Chairman of the Management Board for Geology and Exploration at JSC NC KazMunayGas.

From 2020 to February 2022 - Chief Executive Officer (Chairman of the Management Board) at "KazMunayGas" Exploration Production" JSC.

Since February 2022 - Deputy Chairman of the Management Board for Exploration and Production at JSC NC KazMunayGas.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Dauren Karabayev
Deputy Chairman of the Management Board for Economics and Finance

A member of the Management Board since 2016

Date of birth: 11 June 1978

Education:

- International Economic Relations, the Kazakh State Academy of Management
- Master of Science in Finance, Texas A&M University
- CFA Charter holder.

Experience

Dauren Karabayev began his career as a credit analyst at ABN AMRO Bank Kazakhstan in 2001 and was promoted to Head of the Credit Department in 2003.

In 2004, he came to Halyk Bank as Managing Director and was Deputy Chairman of the Management Board from 2007 to 2016. In 2016 he worked as an project or curator of the project manager at McKinsey & Company. Since 2017, he is the Chairman of the Board of Directors of JSC KazMunayGas Exploration Production listed on the London Stock Exchange.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Daniyar Tiyesov
Deputy Chairman of the Management Board for Oil Refining and Petrochemicals

A member of the Management Board since 2016

Date of birth: 6 December 1970

Education:

- the Atyrau University of Oil and Gas, majoring engineer-technologist
- East Kazakhstan State University named after Sarsen Amanzholov, speciality 'Law'.

Experience

In 1994, Daniyar Tiyesov started working as a manager at Manas, then at Bata LLP and later as an executive director at Abyz LLP. At different periods, he was Assistant to First Vice President, Secretary of the Board of Directors of OJSC Atyrau Refinery, Chief Manager at CJSC NOGC Kazakhoil, Deputy Chief Manager of the group managing the renovation of the Atyrau Refinery, Head of the Day-to-day Operations Control Sector, Chief Specialist in Corporate Management and Day-to-Day Operations Monitoring at the Atyrau Refinery Management Department, Deputy Director of the Oil and Gas Refining and Petrochemicals Department, then Deputy Director of the Petrochemicals Development Department at CJSC NC KazMunayGas, Head of Capital Construction Management, CEO and CFO of the Enterprise Under Construction Directorate of Atyrau Refinery LLP.

At different periods, he was Deputy COO of JSC KazMunayGas Trading House, Deputy Chairman of the Management Board for Refining, Petrochemicals, Managing Director for Oil Refining and Marketing, Deputy Chairman of the Management Board for Oil Refining and Marketing at KMG, CEO of JSC KazMunayGas – Refining and Marketing, Senior Vice President of KMG, and Executive Vice President for Oil Transportation, Refining and Marketing of KMG.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Daniyar Berlibayev
Deputy Chairman of the Management Board for Oil Transportation, International Projects and Construction of the Saryarka trunk gas pipeline

A member of the Management Board since 2019

Date of birth: 21 December 1968

Education:

- Law, Al-Farabi Kazakh National University

Experience

Between 1991 and 1994, Daniyar Berlibayev worked first as a junior research fellow at the Kazakh branch of the Academy of Sciences of the Soviet Union, then as a legal consultant and Head of the Legal Unit at Barikon. At different periods, he was Chief Specialist in Project Assessment Management at the National Foreign Investment Agency, Deputy Head of the National Foreign Investment Agency at the Ministry of National Economy of the Republic of Kazakhstan, Head of the Legal Expertise Directorate of the Legal Department, and then Deputy Director of the Legal Department at the State Export-Import Bank of the Republic of Kazakhstan (Ex-Im Bank).

Since 1997, Daniyar Berlibayev has been working for KMG Group. At CJSC KazTransOil, he was Head of the Investment Projects Department, Head of the Corporate Finance Department, Executive Director for Finance as well as Finance and Economics Adviser. At different periods, he was Vice President, Deputy General Director for Economics and Finance, and First Vice President at JSC KazTransGas, Deputy CEO at CJSC Intergas Central Asia, First Deputy CEO at CJSC NC Oil and Gas Transportation, First Deputy CEO at CJSC KazTransGas, Managing Director for Corporate Governance at CJSC NC KazMunayGas, Deputy Director for Corporate Development at CJSC KazTransGas, Managing Director for Finance and Economics at CJSC NC KazMunayGas, and CEO of CJSC NMSC Kazmortransflot. From 2005 to 2007, he served as First Deputy CEO at JSC KazTransGas and CEO of JSC Intergas Central Asia.

At different periods, he served as Vice President of Midstream and Downstream at KMG, Managing Director of Gas Projects and CEO of JSC KazMunayGas – Refining and Marketing, CEO of JSC KazTransGas, Managing Director for Gas Projects at KMG, First Deputy Chairman of the Management Board at KMG, Deputy Chairman of the Management Board for the Corporate Centre.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Dastan Abdulgafarov

Deputy Chairman of the Management Board for Strategy, Investment and Business Development

A member of the Management Board since February 2020

Date of birth: 16 December 1974

Education:

- Zhautykov Republican Physics and Mathematics School
- International Law, Kazakhstan Institute of Law and International Relations
- International Economics and Law, Diplomatic Academy of the Ministry of Foreign Affairs of the Republic of Kazakhstan
- Master in Petroleum Business, Eni Corporate University (Milan, Italy)
- Executive MBA (Finance and Investments), Moscow School of Management SKOLKOVO

Experience

Dastan Abdulgafarov has been with KMG Group for more than 18 years, 14 of which he held management positions.

At different periods, he worked as a lawyer in the International Contract Department, Chief Manager and Director of the New Project Development Department, Deputy Director and then Director of the New Offshore Project Development Department, Head of the Project Management group at KMG and JSC MNC KazMunayTeniz. He was an advisor to the General Director, Managing Director for Business Development and Deputy General Director for Economics and Finance at JSC KazMunayGas Exploration Production, Managing Director for Exploration and Production Business Support, Head of Staff – Managing Director for Development at KMG.

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Malik Saulebay

Deputy Chairman of the Management Board

A member of the Management Board since 2020

Date of birth: 7 May 1975

Education:

- Zhautykov Republican Physics and Mathematics School
- Economics, Turar Ryskulov Kazakh State Academy of Management
- Law, Kazakh Academy of Labour and Social Relations
- MBA with honours, the Gubkin Russian State University of Oil and Gas .

Experience

26 years of professional experience.

Malik Saulebay started his career in 1995 and until 2000 held various positions in the banking industry (leading economist and Deputy Department Director at Kazpochtabank, senior accountant/controller at JSC ALFA-BANK, Head of Directorate at OJSC TransAsian Trade Bank), and from 2000 to 2005 – in public prosecutions (prosecutor at the Prosecutor's Office in the City of Astana, Almatinsky District, Assistant to Deputy General Prosecutor and Head of Directorate at the Prosecutor's Office in the City of Astana and the Transport Prosecutor's Central Regional Office).

Malik Saulebay has a breast badge for Excellence in Public Prosecution, and in 2005, he successfully passed a qualification exam and was included into the state register of judges.

From 2005 to 2006, he served as Deputy Chairman of the Management Board at JSC Kazakhstan Mortgage Company, Head of Directorate at the Committee on Insolvent Debtors of the Ministry of Finance of the Republic of Kazakhstan.

In 2006, he was Director for Asset Management at JSC KazTransGas; from 2007 to 2009 – CEO of JSC KazTransOil-Service; from 2009 to 2011 – Adviser to the CEO, Managing Director for Legal Affairs at JSC KazMunayGas Refining and Marketing; from 2011 to 2016 – Managing Director for Legal Support, Head of Staff and member of the Management Board at JSC KazMunayGas Exploration Production; from 2016 to 2018 – Vice President for External and Corporate Relations at JSC Karazhanbasmunai; from 2018 to 2019 – Managing Director for Risk and Legal Affairs, member of the Management Board at JSC Samruk-Energy.

Malik Saulebay has served at KMG as Managing Director for Legal Support since May 2019 and as a member of the Management Board since February 2020. On December 10, 2021, he has been appointed as Deputy Chairman of the Management Board of KMG

Holds no shares in KMG or its subsidiaries and associates (directly or indirectly), is not involved in any transactions therewith.

Remuneration Report

Remuneration of the Board of Directors

The Resolution of JSC Samruk-Kazyna's Management Board dated 26 September 2016 approved the Guidelines on Forming Boards of Directors at Companies of JSC Samruk-Kazyna, which provide, inter alia, for a procedure for remuneration payable to members of such Boards of Directors. Remuneration reflects the duties of the respective member of the Board of Directors, the scale of the company's operations and its long-term goals and objectives. Remuneration is also paid to independent directors. The level of remuneration payable to representatives of JSC Samruk-Kazyna on such boards is determined by a resolution of JSC Samruk-Kazyna's Management Board.

Remuneration of the Management Board

KMG's Board of Directors determines the remuneration policy and the procedure for assessing performance of members of KMG's Management Board in line with the Corporate HR Management Standard of JSC Samruk-Kazyna Group, approved by the Resolution of the JSC Samruk-Kazyna's Management Board dated 14 December 2017.

Remuneration paid to members of the Management Board for the reporting period (year) is performance-related to encourage them towards the strategic and priority goals outlined in measurable, interrelated, consistent, and balanced motivational KPI scorecards.

A motivational KPI scorecard outlines corporate and functional KPIs.

The Nomination and Remuneration Committee of the Board of Directors pre-reviews matters related to building an effective and transparent remuneration framework.

The total remuneration paid to members of KMG's Management Board for 2021 amounted to KZT 227,908,251.96, including all salaries and financial benefits (plus taxes and pension contributions) paid by KMG to members of the Management Board for serving on the Board in 2021, under the Remuneration Rules for Members of the Management Board (executives) and Remuneration Rules for the Employees of Internal Audit, Corporate Secretary, Compliance and Ombudsman of JSC NC KazMunayGas, approved by the Resolution of KMG's Board of Directors dated 10 September 2020.

Total remuneration paid to members of the Board of Directors in 2019–2021

Indicator	2019	2020	2021
Total remuneration paid to members of the Board of Directors in USD	1,418,097	819,020	381,944
Total remuneration paid to members of the Board of Directors in KZT	18,559,956	15,799,427	18,200,000

RESPONSIBILITY STATEMENT

In line with the Code, the Board of Directors, and the Management Board are responsible for preparing a reliable annual report and financial statements of the Company.

The Board of Directors and each member of the Board of Directors confirm that they recognise their responsibility for preparing and approving the annual report and financial statements, and consider the annual report and financial statements, taken as a whole, to be fair, balanced and understandable and to provide the information necessary for shareholders to assess the Company's position, performance, business model and strategy.

Each member of the Board of Directors confirms that to the best of their knowledge:

- the financial statements, prepared in accordance with IFRS, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Company and the subsidiary undertakings included in the consolidation taken as a whole
- the Management Board's report includes a fair review of the development and performance of the business and the financial position of the Company and the subsidiary undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties they face.

In line with the Code, the Board of Directors has determined that Christopher Walton, Philip Holland and Timothy Miller are independent in character and judgement. The Board of Directors has also determined that there are no relationships or circumstances which are likely to affect, or could appear to affect, the directors' judgement.

CORPORATE CONTROL

In the event of corporate conflicts, the parties attempt to settle them by negotiation to efficiently protect the interests of KMG and other stakeholders.

In order to be effectively prevented or addressed, corporate conflicts primarily need to be identified as soon and fully as possible, with all corporate governance bodies to act in a consorted manner.

Corporate conflicts are addressed by the Chairman of the Board of Directors assisted by the Corporate Secretary. If the Chairman of the Board of Directors is involved in a corporate conflict, such cases are addressed by the Nomination and Remuneration Committee.

Internal Audit

Internal audits are carried out by KMG's Internal Audit Service (IAS).

The IAS reports and is accountable to KMG's Board of Directors, and is supervised by the Audit Committee of KMG's Board of Directors.

The activities of the IAS are governed by: Kazakhstan's laws; KMG's Charter; resolutions of KMG's governing bodies; internal documents regulating the IAS activities; Regulations on KMG's IAS and Guidelines for KMG's Internal Audits.

The IAS focuses on providing the Board of Directors with independent and objective information to ensure the effective management of KMG and its subsidiaries and associates by employing a systematic approach towards improving risk management, internal control and corporate governance processes.

The annual Internal Audit Plan is developed from a consideration of the principal risks confronting KMG, the audit testing cycle and management requests.

The Internal Audit Plan also accommodates ad hoc requests from KMG's Audit Committee, Board of Directors and management.

To perform its activities in accordance with the annual audit plan, the IAS:

- assesses the reliability and effectiveness of applicable internal controls and risk management procedures
- assesses the reliability, completeness and objectivity of the accounting policy as well as financial statements of KMG and subsidiaries and associates based on such policy
- assesses the efficiency of resource management at KMG and subsidiaries and associates and the methods used to ensure asset integrity
- monitors compliance with Kazakhstan's laws, corporate operational, investment and financial rules and regulations.
- The IAS uses audit results to make recommendations on improving KMG's operations. The IAS consistently monitors and oversees the development and execution of measures to implement its recommendations.
- Internal audit matters reviewed by the Audit Committee at its meetings include:
- IAS annual performance report
- IAS quarterly performance reports, including reviews of any material findings identified in audit reports and follow-up on the implementation of internal audit recommendations
- annual audit plan and amendments thereto
- KPI scorecards of the IAS head and staff
- IAS strategic plan
- IAS budget
- HR management within the IAS.

The Audit Committee not only monitors the IAS' performance but also facilitates the professional development of the IAS employees and the management of its talent pool.

These matters are covered by the IAS reports and reviewed by the Audit Committee on a quarterly basis.

The high professional level of the IAS employees is a key performance driver for KMG's internal audit function; therefore training and upskilling are prioritised.

Assessments of the internal audit process performance

As required by the IAS quality assurance and improvement programme, following each audit, the audited entity is required to complete a form assessing the IAS' performance. Results of these assessments are consolidated into the IAS quarterly and annual performance reports reviewed and approved by KMG's Audit Committee and Board of Directors.

An independent external assessment of the IAS is performed once every five years in accordance with the International Standards for the Professional Practice of Internal Auditing. In 2020, IAS underwent an independent external assessment of compliance with the International Standards for the Professional Practice of Internal Auditing, international best practices, KMG's Regulations on the Internal Audit Service, the Company's Code of Ethics and other applicable external and internal regulations governing the internal audit function, and was found 100% compliant with the standards.

Therefore, the activities of the IAS were recognised to be fully compliant with the International Standards for the Professional Practice of Internal Auditing.

Compliance Service

KMG conducts its business in a fair, honest and transparent manner while also paying special attention to the observance of these principles by our colleagues and partners. To this end, the Company has in place the Code of Business Ethics, Anti-Corruption Policy, Confidential Informing Policy, Conflict of Interest Policy, Counterparty Due Diligence Policy and Internal Control Rules for Granting Access Rights to Insider Information and Preventing Information Misuse by Insiders. In addition to the drafting of internal documents, KMG implements timely measures to ensure compliance with new anti-corruption laws and regulations. In 2021, KMG closely focused on strengthening its culture of compliance and looking into the trends affecting compliance processes.

The Company updated its Anti-Corruption Policy and Confidential Informing Policy by banning the receipt of gifts and joint work of close relatives to reflect the recent legislative changes, while also replacing the hotline operator. Furthermore, 2021 saw the adoption of the Counterparty Due Diligence Policy of KMG Group. A similar policy was also adopted across the Company's 35 subsidiaries and associates.

KMG is committed to the best global practices in corporate governance and focuses on continuous improvement of its corporate standards.

The Company worked to improve its internal communications by circulating newsletters reminding employees of KMG's anti-corruption requirements, regulatory changes (amendments to the Law of the Republic of Kazakhstan on Combating Corruption) and the Company's whistleblower hotline. In 2021, the number of whistleblower tips and submissions received via the hotline dropped by 1.5 times year-on-year to 76 from 118 in 2020. The decrease was due to the change of the hotline operator and the spin-off of some subsidiaries from KMG. Tips and submissions received via the hotline are thoroughly reviewed and investigated, with follow-up and disciplinary action taken as necessary, including termination of employment. The Company actively seeks to encourage employees and other persons to report any issues via the hotline.

KMG works to integrate the processes at its subsidiaries and associates into the Group-wide corporate culture by introducing relevant functions and building enterprise-specific compliance programmes at subsidiaries and associates. As part of these efforts, the Company conducted compliance risk assessments at 14 enterprises (KMG, OzenMunaiGas, Embamunaigas, Pavlodar Refinery, Atyrau Refinery, KazTransOil, Kazmortransflot, KMG Engineering, OzenMunayService, Oil Services Company, KLPE, KPI, Kazakhoil Aktobe, and KMG Kumkol). The results of the risk assessment and analysis were used to develop the appropriate risk mitigants. The exercise also included the review of accounting operations, employees' family ties, compliance with the Law of the Republic of Kazakhstan on Combating Corruption and compliance policies.

Extensive work was carried out to set up compliance functions at the enterprise level, develop enterprise-specific compliance programmes and hold online training sessions on compliance and fraud prevention run by a Big Four firm experts for compliance officers of KMG's subsidiaries and associates. Currently, KMG employs 41 compliance officers across its operations. They completed a training course led by forensic experts from an international audit organisation, which covered such areas as counterparty due diligence, conflict of interest identification and management, interviews, employee checks, investigation planning and process, and investigation report preparation.

Since 2020, the Company requires all employees to declare any conflicts of interest. This contributes to the efficiency of conflict of interest management and helps define the requirements for employee conduct to minimise the risks of decision-making affected by personal interests and connections.

In 2021, KMG implemented Phase 1 of the Universal Declaration, supporting the government's goal to create a system of effective control over income and property of individuals to combat the shadow economy and corrupt practices.

KMG joined forces with JSC Samruk-Kazyna to hold meetings with representatives of the Mangystau Region Administration and contractors in Aktau to promote its whistleblower hotline. Meetings on compliance were held with the administrative and management personnel of JSC Mangistaumunaigaz, JSC Karazhanbasmunai, Oil Services Company LLP and Isatay Operating Company LLP.

In order to implement the best global practices in compliance, KMG organised a workshop for compliance officers of subsidiaries and associates, running it jointly with Tengizchevroil.

The Compliance Service supports the development of professional competencies and expertise of KMG Group's compliance officers. Today, our compliance teams include holders of internationally acclaimed certificates from the Association of Certified Fraud Examiners (ACFE) and the International Compliance Association (ICA), and their number keeps growing.

We also note that as part of assigning KMG's 2021 ESG rating, Sustainalytics gave the highest score to the Company's compliance performance, citing the high level of policies in place to prevent bribery and corruption.

Ombudsman Office

One of the key roles of the Ombudsman Office is to make sure that KMG's practices are fair and that the interests of all the Company employees are observed, through early prevention, dispute settlement and conflict resolution, and escalating systemic issues requiring action to relevant bodies and officers, as well as initiating proposals to stabilise conflict situations. KMG's Code of Business Ethics clearly states the principles stipulating that KMG employees and officers shall not tolerate intimidation, even in the form of a joke, discrimination against anyone on the basis of race, religion, nationality, gender, political or other affiliation, social origin, material position, job, language or other circumstances, as well as the granting of any privileges to individual employees based on the above characteristics. KMG Ombudsman's activities are guided by Kazakhstan's laws and KMG's internal documents.

Risk management and internal control

1. Corporate Risk Management System (CRMS) principles

Through risk management, the Company prevents the occurrence of risk events, which affect the achievement of strategic and operational goals, and mitigates their impact if they occur. Risk management is an integral part of the Company's strategic planning, corporate governance and financial stability.

KMG has integrated the Corporate Risk Management System (CRMS) in its key business and management processes. The purpose of the CRMS is to ensure an optimal balance between the Company's growth in value, its profitability and risks. The CRMS is a key element of the corporate governance framework, supporting timely identification, assessment and monitoring of all material risks, as well as application of timely and adequate mitigation measures. The CRMS established at KMG and its subsidiaries and associates covers all areas of their business.

The Company's Risk Management Policy relies on the following principles:

principle	description
methodological consistency	processes are based on unified methodological approaches
continuity	functioning on an ongoing basis
comprehensive nature	covering all business lines and all types of risks arising from operations
accountability	organisational structure of the CRMS establishes competence of risk management decision-making and control at all levels of KMG Group
informed and timely communication	the risk management process is supported by objective, reliable, and up-to-date information
rational approach	to implement risk management measures, the Company uses resources rationally, ensuring economic efficiency of risk management activities
reasonable assurance	reasonable assurance of delivering on the Company's strategic and operational objectives, but not absolute assurance due to limitations inherent in the external and internal environment
adaptability	regular improvement to identify all possible business risks and ensure the most effective application of risk control and management methods
clear regulation	all operations comply with the procedures stipulated by internal regulations
active involvement of the management team	the management team is actively involved in, and supports the implementation and improvement of the CRMS

Corporate Risk Management System Policy of JSC NC KazMunayGas and its subsidiaries and associates is available on the Company's website.

2. Risk management process

The CRMS is designed to provide a consistent and clear framework for managing the risks associated with KMG's operations. The Company has a vertical risk management process and risk management system in place at all governance levels. Each officer is responsible for ensuring that risks are properly assessed during decision-making. Risk assessment involves a range of qualitative and quantitative tools factoring in risk probability and potential impact.

Implementation of the above components of the risk management process at KMG Group fosters a group-wide risk culture driven by the appropriate "tone at the top", strong risk awareness and knowledge, and the accountability of risk owners/risk factor owners, as well as active risk management and timely reporting.

3. Risk appetite

The Company's risk appetite shows its level of risk retention under which the Company is able to achieve its strategic goals and operational targets. It also caps the level of critical risks/risk factors that the Company is willing to accept.

Selected excerpts from KMG's risk appetite statement

Financial activities	Operations	Investment activities
• Compliance with covenants in debt instruments • Ensuring that the Company's credit ratings are not downgraded • Maintaining sufficient liquidity and positive consolidated free cash flow • Ensuring that the targeted dividend flow from subsidiaries and associates to the Company does not go down • Minimising tax risks and preventing misstating business transactions in accounting and tax accounting and financial statements	• Zero tolerance of negative impact on reputation, health, safety and environment • Ensuring social stability in the operating regions • No transactions leading to violation of sanctions • In managing its information security and cyber risks, the Company ensures service availability, integrity of the information resources, software and hardware, and prevents unauthorised disclosure of confidential information • Zero tolerance towards any form of corruption and fraud, as well as violations of business ethics • Zero tolerance approach to losses and harm caused by environmental pollution • Ensuring that the carbon footprint reduction targets are met	• Compliance with the requirements of JSC Samruk-Kazyna's investment policy • Financing of investment projects primarily with equity. In case of borrowing, ensuring that the Group's financial stability is not undermined • Implementation of subsoil use projects with strategic partners primarily under carry financing • Considering new investment projects with due regard to their compliance with the required PI (profitability index), as well as their contribution to reducing the carbon footprint and carbon intensity of products

4. Improving risk management

Initiatives to develop and improve the CRMS

KMG has been continuously improving its CRMS and consistently enhancing its risk management framework. To reaffirm its commitment to the continuous development and improvement of the CRMS, the Company took a number of measures and steps in 2021:

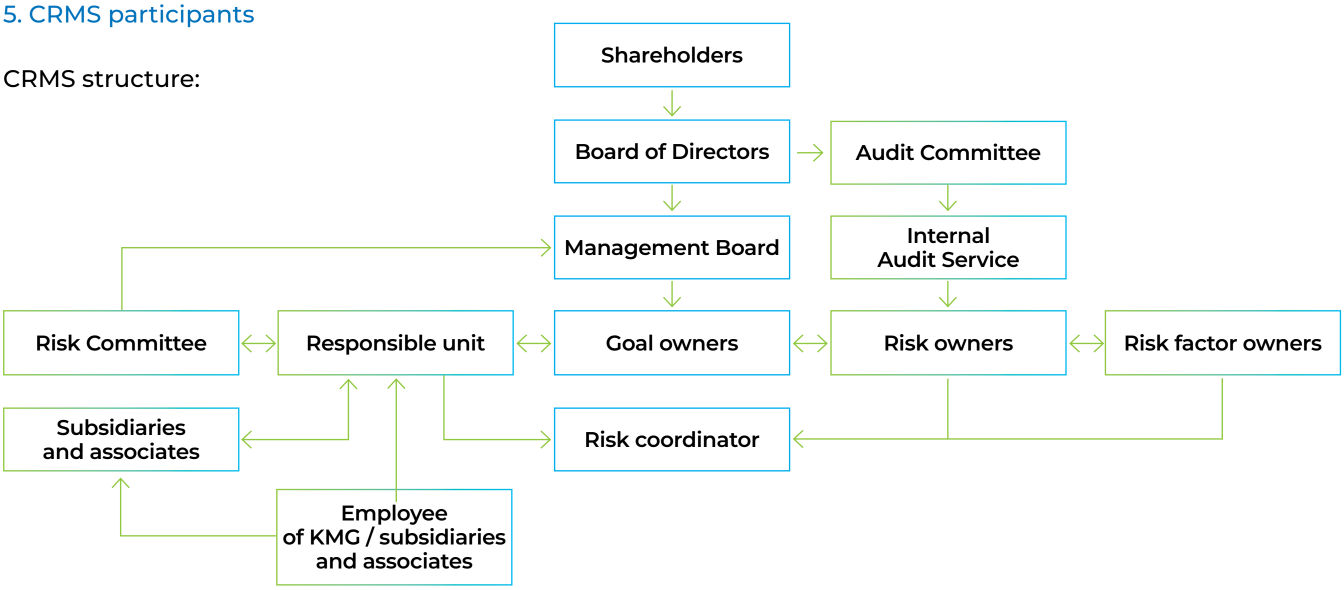
- was assigned a BBB rating for the Risk Management, Control and Audit component as part of an independent corporate governance diagnostics (for reference: in 2018 – BB);
- ensured interaction with the Company's Board of Directors on certain matters (cyber risks, climate risks, carbon border regulation risks and other matters);
- developed and approved by the Board resolution a credit risk management methodology;
- implemented the weekly reporting format and organised the provision of data on the Company's key events and risks to the Fund;
- enhanced interpretation of risk assessment results for investment projects based on simulation modelling (stress-testing) of project KPIs;
- RMICS staff held online trainings on the implementation of the risk management system as requested by subsidiaries and associates;
- ensured continuous improvement of professional competencies of RMICS' risk managers and obtained international certificates in 2020–2021, in particular: PRM from PRMIA, CFA and PMP, as well as ISO 31000:2009/2018.

Plans to develop the risk management system

- Developing the CRMS (updating the CRMS Policy and standard rules for establishing a risk management process, regulatory and methodological documents).
- Implementing an action plan for corporate governance improvement in terms of CRMS, ICS, and BCMS based on the results of corporate governance diagnostics.
- Launching and rolling out an updated version of the automated risk management system (ARMS) across subsidiaries and associates: organising trainings for KMG's risk coordinators and risk managers of subsidiaries and associates on the use of the updated ARMS, ensuring technical support of the ARMS.
- Developing the risk culture.
- Ensuring cross-functional cooperation to manage risks in project management, information security, sustainable development, compliance, strategy, and KPIs.

5. CRMS participants

CRMS structure:



Functions and responsibility of CRMS participants

Board of Directors	• is responsible for having an effective CRMS and ICS in place; • approves strategic, medium-term and short-term goals, risk appetite, tolerance levels, risk registers, risk map, key risk indicators (KRIs) and risk management action plan. Quarterly risk reports, RMS performance indicators, and business continuity plans.
Management Board	• is responsible for the organisation and effective functioning of the CRMS, and timely submission of quarterly risk reports to the Fund and the Board of Directors; • ensures implementation of the CRMS Policy and improvement of internal documents on risk management of the Company and subsidiaries and associates; • approves registers of KMG's risk owners, risk factor owners, and risk coordinators; • reviews quarterly risk reports and takes appropriate measures.
Risk Committee	• endorses the risk appetite, risk register, risk map, risk management action plan, KRIs, risk tolerance levels, and quarterly risk reports for submission to the Board of Directors for approval; • reviews the Company's risks and the effectiveness of risk management measures. Methodological documents on risk management, proposals to develop risk management policies, procedures, and structure. New approaches to risk management, action plans to improve the CRMS; • assesses the effectiveness of the risk management process, notifies the Board of Directors of material weaknesses in the CRMS, and develops recommendations to improve the risk management process; • assesses the effectiveness of preventive measures against the risk / risk factor (controls) and prepares recommendations to eliminate the identified deficiencies; • notifies the responsible unit of new risk factors identified in the course of audits not included in the register.
Internal Audit Service (IAS)	• assesses the effectiveness of the risk management process, notifies the Board of Directors of material weaknesses in the CRMS, and develops recommendations to improve the risk management process; • assesses the effectiveness of preventive measures against the risk / risk factor (controls) and prepares recommendations to eliminate the identified deficiencies; • notifies the responsible unit of new risk factors identified in the course of audits not included in the register.
Responsible unit	• ensures the operation of the CRMS, development and update of methodological documents on the CRMS; • provides advisory support to units on the CRMS operation, holds training events; • analyses the context (internal and external environment), monitors internal/external factors that may have a significant impact on the Company's risks; • reviews and approves risk registers, consolidates risks for the Group and analyses information, is responsible for timely preparation of the Company's risk register, risk map, risk management action plan, prepares quarterly reports on the Company's risks for the Management Board and the Board of Directors; • exercises control over risk management measures, conducts timely monitoring of compliance with risk tolerance levels, KRIs; • interacts with the IAS, KMG's units, external consultants, and other stakeholders on risk management within its competence; • organises the interviewing of KMG's risk and risk factor owners and provides for methodological support in the application of expert methods of risk identification and assessment.
Goal owners	• are responsible for the coordination of risk values in quantitative / qualitative terms affecting the achievement of the established KPIs (targets), and risk management action plan; • oversee timely implementation of the approved risk management action plan.
Risk owners / risk factor owners	• are responsible for proper management and control of the risks associated with the processes overseen by the risk owner, for providing timely and complete information on the status of risks and performance of risk management measures; • develop and implement business continuity plans; • ensure the development of mechanisms for managing certain types of risks and controls associated with the processes overseen by the risk owner / risk factor owner (corporate standards, regulations, policies for managing certain types of risks) aimed at mitigating risk exposure.
Subsidiaries and associates	• ensure timely organisation of the risk identification and assessment process in line with the methodological documents of the CRMS; • are responsible for proper management and control of risks associated with the processes of subsidiaries and associates, timely risk reporting, as well as providing complete information on the status of production/non-production risks and performance of measures for their management, reporting on materialised risk events; • develop and implement business continuity plans for subsidiaries and associates.
Each employee of KMG / subsidiaries and associates	• is responsible for performing their risk management duties in line with their job descriptions; • notifies in a timely manner the responsible unit of KMG / subsidiaries and associates, their direct supervisor of any committed or possible errors, deficiencies that have led or may lead to potential losses, of potential and materialised risk events in the manner and within the time frames established by the internal documents of the CRMS; • receives risk management training under the approved training programme.

6. Internal Control System (ICS)

The ICS is an integral part of the CRMS. The system uses the COSO framework and includes five interrelated elements: control environment, risk assessment, controls, information and communication, and monitoring procedures. It is designed to achieve reasonable assurance that KMG will reach its goals across three key areas:

- Improving operational efficiency;
- Preparing complete and reliable financial statements;
- Complying with Kazakhstan's laws and KMG's internal documents.

The ICS focuses on analysing business processes, timely identifying and analysing process-level risks inherent in KMG's operations, as well as defining and analysing controls for managing these risks.

The ICS is integrated into KMG's core and supporting business processes and includes procedures for promptly notifying the appropriate governance level of any material weaknesses and control bottlenecks, together with details of corrective actions that have been or should be taken.

The ICS is organised in line with the Internal Control System Policy, which sets out the goals, operating principles and components of the ICS and the Control System Guidelines, which define powers and responsibilities, operating procedures, internal control structure, performance criteria and forms of records.

KMG annually approves the ICS work schedule based on the criticality ranking of business processes as well as recommendations by external and internal auditors. The schedule specifies when business processes will be formalised/updated and design of controls tested (analysed). Formalisation means the design and update of the existing risk flowcharts and matrices, and business process controls. Improvement recommendations are prepared based on the results of design testing (review). Similar activities are performed by subsidiaries and associates. The results of these ICS activities are communicated from time to time to business process owners, IAS, external auditor, Management Board, and the Board of Directors.

ICS-related meetings and trainings for employees of KMG and its subsidiaries and associates take place annually, with workshops, experience sharing, discussions of issues and their solutions.

In 2021, KMG Risk Management and Internal Control Service continued its work to further implement and improve internal controls. Efforts were made jointly with business process owners to formalise internal controls for 17 business processes. Areas for improvement were identified and recommendations for the improvement of controls were prepared. A self-assessment survey on the maturity of ICS and BCMS in subsidiaries and associates was conducted.

In 2022, and subsequent years, the Risk Management and Internal Control Service will continue to improve the ICS. It is planned to continue formalising and testing (analysing) the design of controls, providing recommendations on controls, updating the matrix of Company-wide risks and controls, assessing the maturity of KMG and its subsidiaries and associates, holding trainings and improving the risk culture.

It should also be noted that KMG is aware of the importance of the internal control system in relation to the process of preparing and reviewing financial statements. This process involves providing reasonable assurance about the accuracy of the financial statements and their compliance with applicable accounting standards. To this end, the KMG group companies, in addition to methodological documents that determine the approach to accounting for operations and the preparation of financial statements, have formalised and implemented an internal control process, including a matrix of risks and controls over the preparation of financial statements. The effectiveness of the internal control of the KMG group companies over the financial statements is regularly checked by independent audit companies. In addition, the current preventive measures in relation to possible risks in the preparation of financial statements are the following:

- annual approval of the calendar for preparation of KMG's consolidated financial statements;
- quarterly development of the schedule for closing and preparing financial statements and subsequent communication with the organisations of the KMG Group of companies;
- quarterly analysis of questionnaires provided by the companies of the KMG group on non-standard situations;
- quarterly evaluation of the chief accountants of the organizations of the KMG Group of companies (in terms of timely and accurate presentation of financial statements).

7. Business Continuity Management System (BCMS)

The Business Continuity Management System (BCMS) is a set of processes and procedures aimed at identifying potential threats/risks and assessing their impact on the activities of KMG and its subsidiaries and associates, which provides the basis for improving the Company's resilience to incidents by implementing effective responses capable of restoring its operations and protecting stakeholders' interests, the Company's business reputation, brand and value-adding operations.

The Company recognises the importance of having the BCMS in place and manages business continuity by identifying the necessary conditions and resources to develop and improve measures and tools to ensure business continuity in the context of threats and risks leading to business interruption.

The BCMS is organised in line with KMG's BCMS Policy and the Rules for the Business Continuity Management Process. The BCMS Policy defines the scope, objectives, basic principles, and model of the business continuity management system, taking into account the recommendations of the international standard in business continuity management. The Rules for the Business Continuity Management Process define the procedures for determining BCMS' scope of application, business impact analysis, developing and approving the Business Continuity Plan (the "BCP"), BCP testing, monitoring and improvement of the BCMS, training and raising awareness of employees.

In 2020, KMG's Board of Directors approved a Comprehensive Business Continuity Plan for KMG's critical business processes, which reflected the measures designed to ensure that KMG can continue to perform its critical activities at the established acceptable level.

In 2021, the Risk Management and Internal Control Service conducted work to identify critical business processes at KMG's subsidiaries, tested KMG's Business Continuity Plan and identified areas for improvement.

In 2022 and subsequent years, the Risk Management and Internal Control Service will continue to improve the BCMS. Efforts will be made to update critical business processes, refine and improve the Business Continuity Plan and similar work will be done at subsidiaries.

8. Corporate insurance

Insurance is central to ensuring robust risk control and financial management across KMG Group as it serves to protect the property interests of the Company and its shareholders against unexpected losses that may result from operations, including due to external factors.

The Group's insurance function is centralised in order to enforce the unified corporate standard for obtaining and maintaining insurance cover, which enables the Company to apply a comprehensive approach to managing continuous coverage. Independent appraisal of reproduction cost / replacement cost new (RCN) and risk assessments are also coordinated through risk surveys conducted by independent risk engineers across KMG Group.

KMG's Corporate Insurance Programme includes the following key types of insurance coverage:
- Insurance of core operating assets of the Company
- Public liability insurance
- Energy risk insurance

A reinsurance company is only considered for reinsurance when holding a financial credit rating of at least "A–" on the Standard & Poor's scale. Best industry practice is applied in negotiating the optimal insurance and risk coverage terms for the Company.

9. Key risks: updated table for the previous year.

KMG operates in a constantly changing environment. Some risks can evolve over time, while their potential impact and likelihood can change in response to internal and external factors. KMG manages, tracks and reports key risks and uncertainties that can affect its strategy's implementation.

During the reporting period, a number of risks materialised, but their negative impact was managed and minimised through risk mitigation measures.

Below are the Company's key risks.

▼ Risk has reduced ▲ Risk has increased ◆ Risk does not change

Trend (over the year)	Risk description and likely impacts	Mitigation and management
◆	**Production decline risk** Declines in production from mature fields is KMG's key operational risk. The main external risk factors are: failures of external electricity supply, severe weather conditions; and obligations to further cut oil production as part of the OPEC+ agreement. Impact: During 2021, there were instances of unscheduled decline in production that had impact on the performance of the Company's production programme. For more details see the Upstream section.	To maintain production rates at existing fields, KMG: • implements measures to increase time between well repairs and ensure timely execution of well services, workovers and well interventions • implements upgrade programmes for obsolete equipment • deploys new technologies to maintain production at mature fields • improves production efficiency (waterflood management, removal of restrictions on surface infrastructure, increase in oil recovery, commissioning of facilities for further exploration at production assets) • introduces automation Control over the implementation of projects to modernise and upgrade the systems of energy suppliers is being strengthened. As part of reducing energy dependence and the cost of hydrocarbon production, projects to commission the Company's own power plants at the fields are running. Diversification of production assets. As oil production volumes will also depend on the terms of the OPEC+ agreement, on its part, the Company will continue the necessary interaction with Kazakhstan's competent government bodies on the joint cuts of oil production by the OPEC+ countries.

Trend (over the year)	Risk description and likely impacts	Mitigation and management
▲	**Work-related injury risk** Employee non-compliance with the established health and safety rules, and breaches of operational discipline may pose a threat to the life and health of employees. Impact: Violations of operational health and safety rules may lead to injuries as well as production disruptions, financial losses, and reputational damage. In 2021, 28 lost-time accidents and 1 fatal accidents occurred.	To prevent industrial accidents, KMG implements organisational and technical measures that ensure: • safe work execution and prevention of work-related injuries and occupational diseases • timely training and knowledge testing • internal health and safety controls • deployment of new technologies and mechanised techniques • improvement of industrial safety for production facilities • Implementing the Near Miss Reporting Programme through the Korgau Card project[1] • Implementation of the behaviour-based safety programme and behaviour-based driving safety programme in subsidiaries and associates continues The Company has Codes, Policies, Regulations, and corporate standards in place: • Policy on Safe Operation of Land Vehicles • Golden Rules code for employees • Corporate wellness programme • KMG Group's corporate standard for engaging contractors on HSE • KMG Group's corporate standard for building HSE capabilities • KMG Group's corporate standard for occupational health • Rules for identifying occupational health, safety, and environmental threats and risks in hazardous operations • Occupational health, safety, and environmental awareness programme • Regulations on Safe Operation of Land Vehicles.
◆	**Risk of emergencies or man-made disasters at production facilities** The Company's operations are potentially hazardous. KMG is exposed to the risk of damage to property, third parties or the environment caused by accidents or emergencies, man-made disasters at production facilities or third-party misconduct. Impact: • 1) In the first half of the year, a T-101 air cooler ignited on the territory of KazGPZ LLP (Zhanaozen). The damage is estimated at USD 3.7 mln. • To settle the insured event, the payout (after deducting the proceeds from the sale of scrap metal and the deductible) is expected to be USD 1.7 mln. • 2) In the second half of the year, there was an incident at the Petromidia Refinery (KMGI) at the diesel hydrotreating unit which resulted in a fire. The damage is estimated at USD 45 mln. • To settle the insured event, the payout is expected to be USD 38 mln.	To mitigate operational risks, the Company: • ensures timely maintenance and repair of equipment as required by relevant regulations • performs timely retrofits and upgrades • performs timely diagnostics and identification of potential hazards, as well as industrial safety assessments of production facilities • improves the technical expertise and qualifications of operating personnel The Company is phasing in advanced protection, safety and security technology and solutions. Annual voluntary property insurance contracts are executed (against the risk of accidental destruction, loss or damage) for insured events.

[1] The use of the Korgau Card is aimed at identifying and reporting an unsafe condition, unsafe behaviour, unsafe action, hazardous event or hazardous factor, as well as good practice and suggestions (initiatives).

Trend (over the year)	Risk description and likely impacts	Mitigation and management
	Environmental risk and climate change risk The Company is exposed to the risk of adverse environmental impact and the risk of tougher responsibility for non-compliance with environmental laws, as well as risks related to climate change. **Impact:** Environmental risk materialisation may entail financial expenses in the form of fines, excess emissions charges, environmental remediation costs, as well as legal liability and escalating social and environmental tensions. For more details, see section Ensuring sustainable development. For more details, see section Ensuring sustainable development.	The Company's priorities in environmental protection: • Atmospheric emissions management and reduction of routine flaring • Water management • Production waste management • Land reclamation • Energy efficiency improvement To mitigate the environmental risk, the Company: • ensures preventive management of significant environmental aspects, based on project management and a risk-based approach, to improve environmental performance • quarterly assesses and analyses the flaring rate in the upstream sector under IOGP requirements • engages stakeholders on environmental issues • implements the Memorandum of Cooperation in Environmental Protection signed with a competent authority to dispose of and recycle waste from its subsidiaries and associates • comprehensively develops the corporate environmental function and aligns KMG's activities with green economy principles • develops and implements corporate documents (the Company's updated Environmental Policy has been approved with due regard to the requirements of the new Environmental Code). The Company actively participates in working groups with competent government bodies to develop by-laws for the new Environmental Code (effective from 1 July 2021) and industry-specific BAT (best available techniques) handbooks, and implements a set of measures to roll out BAT and AMS (automated monitoring systems). In September 2021, a training session for the Company's Board of Directors and Management Board on the requirements of Kazakhstan's new Environmental Code was held as part of the HSE Forum of KMG Group's CEOs. Climate change risks: • carbon and water footprint calculations for the Group for 2020 were carried out and posted on the CDP website • discussion of the draft new 2022–2025 National Allocation Plan for Carbon Emissions continues.
	Geological risk The implementation of new exploration projects is always associated with geological risks arising from the uncertainty of geology: lack of hydrocarbon discoveries; failure to confirm or low recoverable oil (gas) reserve estimates. **Impact:** The Company's operations are exposed to the risk that new projects and exploration drilling fail to discover commercially viable oil and gas reserves and/or that the discovered reserves will be lower than originally planned. There are many uncertainties and assumptions involved in estimating hydrocarbon reserves which, if changed, may require a recalculation of hydrocarbon reserves. As a result, the Company may be forced to write-off the related expenses, which may have an adverse impact on its financial performance.	To address this risk, the Company: • collects, analyses, synthesises and updates the geological and geophysical data from the operating area and similar nearby fields • plans geophysical surveys and exploration for hydrocarbons, applies effective study techniques and data processing and interpretation methods • runs high-resolution 2D/3D seismic surveys • conducts regional surveys with international companies (Equinor, LUKOIL, BP) and pilot refining projects involving advanced technology and expertise from foreign companies (Eni) • builds sedimentary, geology and basin models of the region and fields based on qualitative analyses and advanced methods of geochemical and lithology analyses • attracts strategic partners for joint exploration and development of new fields, including under carry financing arrangements to reduce the financial impact of geological risks • fosters professional development of personnel (training, experience sharing with international companies).

Trend (over the year)	Risk description and likely impacts	Mitigation and management
	Social unrest in regions of operation The Company is exposed to the risk of unauthorised strikes Impact: Adverse impact on the Company's reputation, disruption to operations and higher OPEX and impact on CAPEX and project schedules. Rising commodity prices, accelerated domestic inflation or continued weakening of the national currency may affect negotiations over changes to wages and salaries. There were a number of unauthorised strikes with a direct and/or indirect impact on the Company's operations in 2021.	To mitigate social risks, the Company: • runs awareness raising activities across operations, including management holding reporting meetings directly with representatives of the workforce and trade unions • implemented the Regulations on Interactions between subsidiaries and associates and Contractors Working on the Sites of JSC NC KazMunayGas in order to deliver on its labour commitments to contractor employees • has in place and maintains a unified internal communications system, holds mandatory meetings between the management and employees at all the Company's facilities to discuss social, day-to-day and operational matters as well as to develop solutions together • a project for modular training of trade union leaders in subsidiaries and associates was launched – the Corporate School of Trade Union Activists • builds an integrated youth policy system to drive engagement among young employees and encourage them to participate in social activities and be part of the corporate team • launched Nysana, a 24/7 free hotline for calls on any social and labour violations • conducts regular surveys, analysis and monitoring of satisfaction across its footprint. Based on the results of the social stability rating survey, action plans are developed to minimise areas of concern and improve social stability. In Q4, a decision was made to raise employee salaries and wages above the inflation range across the Group.
	Climate risks and low-carbon development **In its operations, the Company faces risks related to climate change, including:** In its operations, the Company faces risks related to climate change, including: • market risks – risks associated with changes in demand and consumer patterns • political, legal, and regulatory risks – risks associated with the transition of the global economy to low-carbon development and with the measures taken in the Company's countries of operation to make regulations on GHG emissions more stringent • reputational risks – risks associated with perceptions by stakeholders of the Company's participation in the transition to a low-carbon economy or refusal to do so • technological risks – risks associated with the accelerated transition of the global economy to low-carbon development due to the development and increased efficiency of low-carbon technologies • physical risks – risks associated with changes in weather and climate conditions and other characteristics of the natural environment in the Company's regions of operation, which may affect equipment reliability and human health (including risks of natural disasters and permafrost thawing). Impact: These risks may have an adverse impact on operations of the Company as a major producer of fossil fuels and source of greenhouse gases in the form of higher costs, lower profits, and limited opportunities for further development. An increase in renewable energy generation can be expected in individual partner countries. It may lead to decline in demand for products supplied by the Company.	1. The Company has developed the 2022–2031 Low-Carbon Development Programme, which includes both existing opportunities to reduce our carbon footprint (higher energy and resource efficiency) and additional areas for decarbonisation (RES, CO_2 capture, use, and storage, forest carbon projects, hydrogen production). 2. A low-carbon development unit and a competence centre for hydrogen energy have been set up. 3. We signed a number of memoranda with international companies (Eni, Total, Air Liquide) for the implementation of joint decarbonisation projects: • construction of a hybrid power plant • construction of a wind farm with a storage system • hydrogen mobility • expert support was provided for the development of project documentation for the CCUS pilot project (carbon capture, utilisation and storage technology) at the Embamunaigas GTU, and training seminars on CCUS were held by Shell.

Trend (over the year)	Risk description and likely impacts	Mitigation and management
	Liquidity and financial stability risks Liquidity, financial stability, and credit rating downgrade risks are KMG's key risks. Impact: Need to immediately repay current borrowings and Eurobonds. Inability to raise sufficient funds to finance the Company's current and investment activities. In 2021, the Company maintained an appropriate level of liquidity and demonstrated adequate financial stability.	To overcome these risks, along with debt management activities and efforts to prevent liquidity shortages, the Company is focused on improving operational efficiency, clear prioritisation of capital expenditures, commitment to financial discipline, rationalisation of the Company's asset and project portfolios, and transition to portfolio-based project management. The Company takes the following measures to prevent risks: • controlling leverage, preventing its growth to maintain financial stability, using free cash flow to repay debt • achieving an optimal balance between debt and internal sources of financing • cost cuts, budget control • repaying existing loans and providing financial aid to subsidiaries and affiliates • preventing deterioration of the Company's solvency position in order to maintain access to debt capital markets and avoid increases in borrowing costs • deleveraging through early debt repayment.
	Compliance risk Intentional corruption for personal or material gain, including for the benefit of third parties. The Company has zero tolerance towards any fraudulent actions regardless of the amount of monetary damage. Impact: In 2021, there was no evidence of this risk being materialised.	The Company consistently implements and reinforces internal controls, embedding group-wide policies to prevent unlawful or wrongful acts of third parties or its employees, and maintaining the procedure for conducting internal investigations of unlawful or wrongful acts of its employees. The Company has adopted policies and standards, as well as committed itself to: • improving and consolidating its internal and compliance controls • anti-corruption monitoring • analysing corruption risks • promoting an anti-corruption culture, taking preventive steps and informing employees on potential violations and enforcement • establishing an organisational and legal framework to foster accountability and transparency of decision-making procedures • implementing and complying with business ethics standards • holding anti-corruption workshops and trainings • analysing drafts of internal documents to identify corruption factors • preventing conflicts of interest • handling whistleblowing reports via the hotline, respective reporting to the Audit Committee and the Board of Directors.
	Volatility of crude oil prices The Company is exposed to the risk of energy price volatility. Impact: Oil price volatility may lead to significant changes in the Company's performance, revenues, and cash flow. Oil price fluctuations in 2021 had no negative impact on the Company's revenue and cash flow. For more details, see the Macroeconomics and Global Trends sections.	In the event of high oil price volatility, recurrence of crises associated with a drop in the Brent price below projections, the Company will take steps to ensure financial sustainability, including but not limited to: • negotiating with the government to further optimise the tax burden on mature fields • introducing and taking anti-crisis measures in a timely manner • adjusting the Company's Development Plan, optimising costs • prioritising and further optimising CAPEX and investment projects • developing targeted measures (e.g. obtaining creditors' waiver; directing volumes to more favourable markets) to mitigate risks that may have an additional negative effect. KMG continuously monitors and analyses price and demand dynamics for crude oil and oil products and also considers purchasing financial tools to be protected in case of a significant fall in oil prices (e.g. analysis of hedging benefits). The Company cooperates with competent state bodies on matters related to OPEC+ deal, implementing measures to stabilise the internal market and stimulating oil exports, and has internal reserves to deliver on its commitments.
	Country risks and the risk of sanctions The Company operates internationally. Any significant adverse change in the economic and political situation in a recipient country could affect the Company's operations. Sanctions against certain countries, including sectoral sanctions, may affect the Company's operations and its prospective joint projects. Impact: Further international sanctions against Russia may affect the Company's current and prospective investment projects, as well as the supply of certain goods and services to the Company's existing facilities. Under the existing anti-Russian sanctions, the Company has not experienced any suspension or restrictions of operations resulting from interactions with Russian counterparties in 2021 .	The Company mitigates country risks by setting country-specific limits based on the analysis of the recipient country (from the economic, political, strategic, social and other perspectives). The Company analysed the impact on its operations from economic sanctions, along with potential response measures. Joint projects / material transactions with Russian entities were reviewed, with relevant potential operational and financial risks explored. The Company monitors existing sanctions to minimise negative impacts and implications, considering the potential widening of sanctions, which may have a targeted impact on the Company's prospective projects. To reduce risks, the Company provides for mechanisms to exit projects or implement them independently in the event of a tougher sanctions regime.

Trend (over the year)	Risk description and likely impacts	Mitigation and management
▲	**Cyber risks** Shifting to work from home, remote connection and increased impact of digitalisation on production and management processes at KMG lead to increased risks of attacks on the Company's ICT system aimed at compromising its integrity, accessibility and security. Impact: No violation of the integrity, confidentiality, and availability of information resources or assets of computer networks was detected in 2021. The Company protects against cyberattack risks not only the information in its possession and its hardware and software but also information provided to it by government bodies, shareholders, business partners, and personal data subjects.	To address this risk, the Company: • introduces specialist information security hardware/software at KMG to ensure automated monitoring of external and internal threats, as well as control over organisational and practical measures to protect the ICT system • runs tests to check its ICT system for vulnerability to external attacks, analyses IT infrastructure security, audits network elements, monitors operating systems security on a regular basis, identifies and blocks attackers • prepares cyberattack emergency response plans to reduce the impact of a crisis situation and minimise its consequences • maintains compliance of the existing information security management system (ISMS) with international standards • organises training for persons responsible for ISMS in information security units • keeps up cyber security hygiene • monitors the availability of information systems and the adequacy of the required information and computing resources • investigates information security incidents.
▲	**Reputational risk** The Company is exposed to reputational risk that affects its business reputation and relationships with investors, counterparties, partners, and other stakeholders. Impact: In 2021, the Company faced various factors that could cause reputational risk to materialise. No negative impact on the Company's financial results has been identified. This risk may materialise through internal and external factors, including non-compliance with legal requirements, arise from media publications, failure to fulfil contractual obligations, substandard quality of finished products, negative perception of the Company's financial stability and financial position.	The Company implements a range of measures to manage this risk including publications in the media, holding of briefings, press conferences and management presentations highlighting various aspects of the Company's activities and raising awareness among stakeholders. The Company daily tracks press mentions of its activities and promptly responses to unreliable information (rumours) published in media and social networks. In 2021, a media plan for informational support of the vaccination progress in the Group was developed and implemented. Measures to combat COVID-19 at our sites and measures taken to contain its spread were widely covered in the media. Responses to media enquiries were promptly prepared, and the Company's relevant units were involved. The Company maintains a speak-up hotline and a procedure ensuring prompt responses to complaints and claims to eliminate their root causes.
◆	**FX risk** Currency risk is a potential negative change in the Company's financial performance due to exchange rate fluctuations. Impact: Appreciation of foreign currencies against the tenge may lead to higher KZT-denominated OPEX, lower margins and a negative impact on the Company's financial results and performance. In 2021, tenge fluctuation against foreign currencies had no material impact on the Company's financial results and performance.	Given the currency mix of its revenues and liabilities, the Company is also exposed to FX risk in its operations. The strategy for managing this risk involves the use of a holistic approach that considers natural (economic) hedging options. KMG ensures the optimal balance of assets and liabilities denominated in foreign currency, and calculates earnings considering the FX risk.

Trend (over the year)	Risk description and likely impacts	Mitigation and management
	Tax risk The Company is exposed to the persistent risks of changes in tax laws and lack of clear interpretation, as well as the risk of increased tax burden and loss of entitlement to tax benefits. Impact: Tax legislation in Kazakhstan is subject to frequent changes and varying interpretations. The tax authorities generally take a more conservative approach in their interpretation of the legislation and in tax audits. As a result, the management's interpretation of tax laws applicable to the Company's operations and activities may be challenged by the relevant tax authorities. The Company operates in a number of jurisdictions and is therefore required to follow complex transfer pricing rules, which may give rise to uncertainty and subjective interpretation. In 2021, this risk materialised, resulting in higher tax expenses.	The Company continuously monitors changes in tax laws, evaluates and forecasts the extent to which they can potentially impact its operations, as well as follows trends in law enforcement practice and considers the implications of regulatory changes for its operations. The Company's specialists regularly take part in various working groups responsible for drafting tax legislation. To mitigate tax risks, the Company improves its tax administration processes and conducts tax audits.
	Interest rate and commercial bank liquidity risk Higher interest rates and lower financial stability of the banking sector can have a negative impact on the cost of borrowing, as well as the placement of idle cash. Impact: Events of default of the Company's counterparties may result in the failure to withdraw funds on their accounts, which may adversely affect the Company's financial results and force KMG to raise additional financial resources to meet its obligations. In 2021, no defaults, untimely or incomplete performance of financial obligations by banks were recorded.	To mitigate these risks, the Company diversifies investments in financial instruments in accordance with the treasury portfolio's pre-defined limits and regularly monitors how idle cash is placed across KMG Group. Most of KMG's earnings are generated in US dollars, while the main source of borrowing is the international lending market. For these reasons, KMG's debt portfolio is largely denominated in US dollars. The interest rates for servicing a portion of these loans are based on interbank lending rates, and their growth may lead to additional debt servicing costs.
	Investment (project) risk The Company is implementing a number of projects in hydrocarbon exploration, production, transportation and processing, which could be exposed to significant risks associated with external and internal factors. The materialisation of such risks can significantly affect the success of these projects. Impact: When running investment projects, the Company faces the risks of rising costs, delays in the commissioning of production facilities, and failure to achieve design parameters.	The Company regularly monitors the status of project implementation in the regions in which it operates, making timely adjustments to project implementation plans as necessary. Where risk can arise affecting the timing, budget or quality of projects, mitigation measures may include negotiations with stakeholders, reduction of operating costs, optimisation of the investment programme, abandonment of unprofitable investment projects. We introduced a project management and investment decision-making system similar to standards adopted by global companies (Stage Gate Process).
	Risk of changes in applicable laws, and litigation and arbitration risks The Company's performance can be impacted by changes in applicable laws, including subsoil use, tax, currency, customs regulations, etc., as well as the risk of negative court decisions on court or arbitration disputes involving the Company. Impact: In 2021, 6 lawsuits over USD 1 mln and no arbitration proceedings were initiated. Until the proceedings are completed, it is impossible to fully assess the impact of these events on the Company's operations.	The Company continuously monitors changes in laws, as well as evaluates and forecasts the extent to which they can potentially impact the operations of KMG Group entities. The Company regularly takes part in working groups to develop and discuss draft laws in various areas of legislation. The Company continuously monitors judicial and law enforcement practices, and actively applies best practices in resolving legal issues and disputes arising in the course of the Company's operations.

Trend (over the year)	Risk description and likely impacts	Mitigation and management
	Pandemic risk (COVID) There are risks of getting infected for the Company's and contractors' employees, including outside the workplace due to ongoing pandemic outbreaks (new waves) of the coronavirus infection (COVID-19), low vaccination rates*, and the spread of more dangerous and contagious variants of the virus. Impact: For more details, see section Occupational health and safety.	During the ongoing pandemic it is critical to continuously monitor the spread of COVID-19, to ensure safe workplaces, and to provide employees with the necessary support. To this end, the Company has taken all possible steps to minimise the negative risk factors associated with the pandemic, specifically: • deployed vaccination/revaccination facilities on the sites, provided access to and availability of vaccines, and screening stations for PCR testing • uses financial incentives and non-financial motivation of employees to vaccinate and revaccinate (e.g. giving at least two fully paid days-off for each vaccination and/or revaccination component on the day of vaccination and the following day, or on other days as agreed with the management) • as at 31 December 2021: more than 49,800 employees of KMG Group (76% of the total headcount) received the first component of the vaccine (2,800 employees (3%) have a contraindication to vaccination). Of these, more than 47,700 employees (73%) received the full course of vaccination (both components) • conducted awareness campaign for employees on the importance of vaccination for collective immunity, communicated the management's message to employees on participation in the vaccination campaign, distributed posters and videos on vaccination and vaccine properties • continues to explore available options to increase vaccination rate among employees, including the supply of vaccines that employees wish to receive. When planning and conducting vaccination of employees, the Company adheres to the following principles: voluntary approach, individual choice, joint efforts, safety and prioritisation • imposed travel restrictions for employees (business trips, conferences, training), social distancing, shifted employees to remote work • introduced special rules relating to employee residence, catering, transporting and shift rotation to minimise contacts • extended rotation period (with reduced working hours), separation and isolation of facilities. Separation into shifts, groups for remote access and replacement opportunities as backup employees • ensures strict compliance with sanitary requirements and mask mandate for facilities and offices (including contractors), including temperature screenings before work and employee COVID-19 screening questionnaires • prepared reserves of PPE (medical masks, respirators, gloves), dispensers, sanitisers and disinfecting solutions as well as minimum life-support packages necessary to maintain life and health, including medicines and medical equipment. To be prepared for further potential pandemic waves, prevent disease and the spread of COVID-19, the Company continues to: • follow previously introduced algorithms (as amended on the first-wave experience) to mitigate the risk of coronavirus infection spread and maintain the anti-epidemic measures, sanitary and disinfection measures • identify critical business processes and options for the emergency recovery of the processes as well as essential personnel, suppliers, materials and equipment, develop business continuity and recovery plans for critical business processes and IT systems.; • engage emergency response and crisis management teams, cooperate with state authorities and medical assistants

Trend (over the year)	Risk description and likely impacts	Mitigation and management
	Risk of terrorism Acts of terrorism and other violence against the Company’s and contractors’ personnel and assets **Impact:** The Company operates in a number of countries where acts of terror and other criminal wrongdoings against the Company’s assets are possible. In 2021, there were no events when this risk materialised.	The Company takes a set of preventive measures, some of which include: • checking the condition of security equipment, alarm systems, up-to-date status of evacuation plans, current status of exits and evacuation routes • training of security and maintenance personnel in counter-terrorist protection of facilities and personal safety in case of emergencies • physical security checks and counter-terrorist security inspections of facilities at subsidiaries and associates • interacting with law enforcement and special agencies on physical security and counter-terrorist security at facilities • participation in the interdepartmental working group on the industry's counter-terrorism instruction • training sessions are held for security, service, and technical personnel in the event of emergencies at facilities • control of the maintenance of video surveillance systems, routine maintenance of ISS, ACS, and boom barriers is ensured • regulations for access control and on-site security were developed and are kept up to date • IDs are issued for VT facilities in line with legal requirements for countering terrorism • as part of preventive measures, employees are informed about actions to be taken in the event of a terrorist attack, about measures for access control and on-site security, and counter-terrorism videos are shown.

STAKEHOLDER ENGAGEMENT

Stakeholder group	Type of provided information	Communication methods
Shareholders	Information on the Company's performance, corporate events of interest for security holders	• Access to information • Representation of shareholder interests on KMG's Board of Directors • Publications on the corporate website • Publications on the website of Kazakhstan Stock Exchange • Financial disclosures on the depositary's internet page
Investors For more details see the Investor Communications section	Information on the Company's performance, corporate events of interest for investors and the investment community in general	• Access to information • Publications on the corporate website, specifically in the Investors section (www.ir.kmg.kz) • Publications on the website of Kazakhstan Stock Exchange • Roadshows for investors and other public events • Meetings, conference calls • Handling requests by e-mail (ir@kmg.kz) and consulting by phone • Publication of press releases • Publication of financial statements on the depositary's internet page
Financial institutions	Financial information of interest for financial institutions, matters of the Company's financial stability	• Access to information • Publications on the corporate website • Publications in mass media
Mass media	Any information unless deemed confidential under Kazakhstan's laws and KMG's internal documents	• Press releases, informational publications, articles on the Company's website and in mass media • Distribution of press releases • Response to mass media's requests • Conference calls, briefings, press tours, forums, information sessions and other media events • Handling requests

SHAREHOLDER AND INVESTOR RELATIONS

KMG's shareholders

Shareholder	Ordinary shares	Ordinary shares, %	Preferred shares	Total shares	Total shares, %
JSC Sovereign Wealth Fund Samruk-Kazyna	**551,698,745**	90.42	-	551,698,745	90.42
The National Bank of Kazakhstan	**58,420,748**	9.58	-	58,420,748	9.58

There were no changes in the shareholder structure in the reporting period. The annual General Meeting of Shareholders, with its roles performed by the Management Board of the Fund according to the applicable law and KMG's Charter, is expected to approve the following documents:

- KMG's 2021 annual financial statements (consolidated and standalone)
- KMG's 2021 net profit distribution procedure
- Amount of dividend per ordinary share in KMG

Dividends

Resolution of the Management Board of JSC Samruk-Kazyna dated 26 August 2021 (Minutes No. 36/21) approved the new JSC Samruk-Kazyna's Dividend Policy for Subsidiaries.

The Dividend Policy aims at ensuring the balance of interests of the Fund and the Companies, as well as predictability and transparency of the approach to determining the dividend amount and payment terms and procedure.

The amount of dividend payable to the Companies is differentiated according to their maturity and financial and economic position determined based on financial stability indicators.

Securities issues[1]

Type of shares	Authorised shares	Outstanding shares	Unissued shares
Ordinary	849,559,596	610,119,493	239,440,103

Dividend history[2]

Indicator	2019	2020	2021
Dividend per share, KZT	60.64	133.97	81.95
Total dividends paid, KZT mln	36,998	81,738	49,999

Debt/EBITDA	(1) < 3.6 (2) > 5.0 (3) < 0.9	50–100% of FCF
EBITDA/Interest rate	3.6<(1)<4.6 3.0>(2)>5.0 0.9<(3)<1.4	50% of FCF
Debt/equity	4.6<(1) 3.0>(2) 1.4<(3)	20–50% of FCF

1. Free cash flow (FCF) is a consolidated cash flow from operations, including dividends of joint ventures net of investment spending on current operations.
2. The Company may reduce the amount of dividend payable by the amount of investments of the Company approved by the Investment Strategy Committee of the Fund and the Board of Directors of the Fund.

The dividend payment timeline is fixed by the General Meeting of Shareholders when resolving to pay out dividends.

JSC Samruk-Kazyna's Dividend Policy for Subsidiaries is available on the Company's website.

The Charter of Joint Stock Company National Company KazMunayGas is available on the Company's website

For more details see the Financial Review section.

[1] As at 1 January 2022

[2] Dividends for Samruk-Kazyna JSC and the National Bank of the Republic of Kazakhstan

Credit ratings

Credit ratings assigned by international rating agencies serve as reliable and independent tools for the Group's credit assessment. KMG aims at aligning its key financial metrics with target investment-grade long-term ratings and exceeding them. The Company provides rating agencies with access to all information necessary for a comprehensive and reliable evaluation of the Group's creditworthiness. Rating agencies and KMG's Management Board hold regular review meetings, and KMG maintains the contacts.

In addition to the Company's operating and financial results and market environment, KMG's credit ratings are linked to Kazakhstan's sovereign credit profile as its change may impact credit ratings of Kazakhstani companies, including KMG.

In 2021, despite material external economic risks, Fitch and S&P affirmed their earlier ratings. Currently, the Company has investment-grade credit ratings from Moody's and Fitch and is two notches below the sovereign rating according to S&P.

- On 28 January 2021, following the revision of its risk assessment for the oil and gas exploration, production and refining sector, S&P affirmed KMG's credit rating at BB with a negative outlook.
- On 30 April 2021, S&P affirmed KMG's credit rating at BB with a negative outlook.
- On 12 August 2021, Moody's upgraded KMG's credit rating from Baa3 to Baa2 due to an upgrade of Kazakhstan's sovereign rating. The rating outlook was changed from positive to stable.

KMG's credit ratings

Rating agency	Date	Rating	Outlook
Moody's Investors Service	23.12.2021	Baa2	Stable
S&P Global Ratings	26.11.2021	BB	Negative
Fitch Ratings	20.09.2021	BBB-	Stable

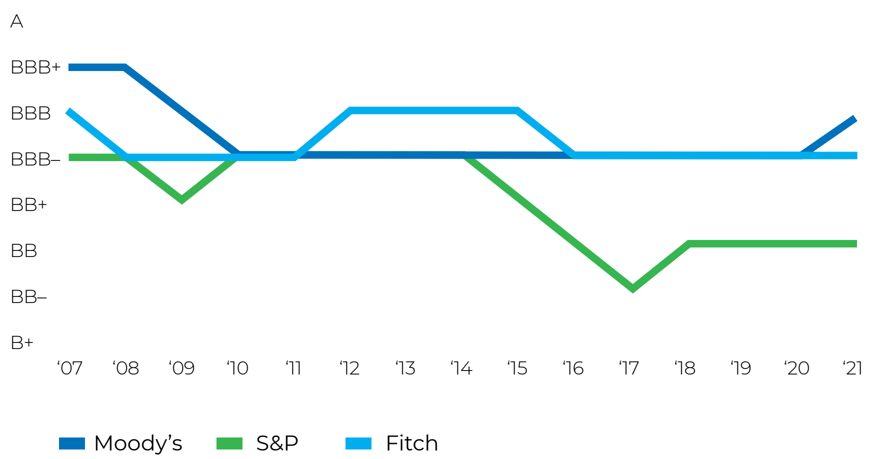
Kazakhstan's credit ratings

Rating agency	Date	Rating	Outlook
Moody's Investors Service	11.08.2021	Baa2	Stable
S&P Global Ratings	04.03.2022	BBB-	Stable
Fitch Ratings	04.02.2022	BBB	Stable

Change in KMG's ratings

KMG credit risk dynamics

Source: Moody's, S&P, Fitch



- On 20 September 2021, Fitch Ratings affirmed KMG's long-term issuer default rating at BBB– (one notch below the sovereign rating) with a stable outlook.
- On 26 Novembe 2021, S&P affirmed KMG's credit rating at BB, after the transfer of JSC KazTransGas directly to JSC Samruk-Kazyna, with a negative outlook.
- On 23 December 2021, Moody's affirmed KMG's credit rating at Baa2 with a stable outlook.

Bond issues

As at 31 December 2021, KMG's consolidated debt (expressed in USD) was USD 8,760 mln, including USD 6,250 mln (71%) in bond issues.

KMG Group's projects are largely financed through its own net cash flows. At the same time, KMG and its subsidiaries and associates may enter the bonds market, if the conditions are favourable, in order to finance individual strategic projects or to maintain financial stability as per the Company's financial strategy.

KMG borrows both on the national and global capital markets in line with its flexible and balanced debt management policy. KMG bonds are among the most liquid instruments among those offered by Kazakhstan's issuers. KMG's FX-denominated bonds have been historically attractive to a wide range of investors. KMG bonds' investor base includes thousands of institutional and retail investors, mostly based in the USA, Europe and Asia. The Company's Eurobonds are traded in the London Stock Exchange, the Kazakhstan Stock Exchange and the Astana International Exchange.

For more details see the Financial Review section.

As at 31 December 2021, KMG had six outstanding Eurobond issues at the Corporate Centre level for a total amount of USD 6.25 bln on par value.

KMG's outstanding Eurobonds[1]

Currency	Issue date / maturity date	Issue size, USD mln	Outstanding bonds, USD mln	Coupon rate, % p.a.	ISIN: RegS / 144A
USD	19.04.2017/19.04.2027	1,000	1,000	4.75	XS1595713782 / US48667QAN51
USD	19.04.2017/19.04.2047	1,250	1,250	5.75	XS1595714087 / US48667QAP00
USD	24.04.2018/24.04.2025	500	500	4.75	XS1807299174 / US48667QAR65
USD	24.04.2018/24.04.2030	1,250	1,250	5,375	XS1807300105 / US48667QAQ82
USD	24.04.2018/24.04.2048	1,500	1,500	6,375	XS1807299331 / US48667QAS49
USD	14.10.2020/14.04.2033	750	750	3.50	XS2242422,397 / US48126PAA03

[1] Senior unsecured, as at 31 December 2021 at the Corporate Centre level.

Investor Communications

KMG continues to successfully implement its investor relations programme to ensure stability of financing and reduce its cost of capital. Communications with investors involve the Chairman of the Board of Directors, Chairman of the Management Board, members of the Management Board and heads of KMG's strategic, financial, and operating units, Health, Safety and Environment Department and the Investor Relations unit.

KMG holds quarterly conference calls for investors to discuss financial and operating results with the Deputy Chairman and members of the Management Board, as well as heads of departments. In addition to the quarterly calls, the Company held special one-on-one calls with investors and rating agencies, and also took part in online conferences on the global sustainable development trends and situation in the emerging markets.

The Company adheres to the principles of timeliness, completeness and availability of disclosures for the investment community. Each quarter, KMG publishes quarterly results presentations, financial results, trading updates, IFRS financial statements and analyst databooks. In 2021, the Company continued its practice to promptly inform investors and analysts on KMG's financial and operating performance upon their request.

Guided by sustainability principles, in 2021 the Company considerably enhanced the transparency of its ESG disclosures. In particular, KMG published its comprehensive 2020 Sustainability Report in 2021. In 2021, the Company's 2020 CDP Climate Change and Water Security Questionnaires were published on the CDP's website. In October 2021, Sustainalytics raised KMG's ESG rating from 69 to 72. The Company's ESG risk rating was improved from 34.5 to 28.4, moving KMG from the high risk category to the medium risk category and highlighting the Company's strong positions in managing material ESG risks in the international oil and gas market.

The materials and publications as well as contacts of the Investor Relations are available in the Investors section on the Company's website.

KMG understands the importance of further enhancing its two-way dialogue with the investment community and regularly conducts investor perception surveys on the Company, with the results reviewed by the Board of Directors.

2021 Investor Calendar

Q1 2021	• Investor conference call on full-year 2020 financial and operating results • 2020 quarterly results presentation • 2020 financial results and trading update • IFRS consolidated financial statements for 2020
Q2 2021	• Investor conference call on Q1 2021 financial and operating results • Q1 2021 quarterly results presentation • Q1 2021 financial results and trading update • Interim condensed consolidated IFRS financial statements for 3M 2021 ended on 31 March 2021 • Publication of 2021 Annual Report
Q3 2021	• Investor conference call on Q2 2021 financial and operating results • Q2 2021 quarterly results presentation • Q2 2021 financial results and trading update • Interim condensed consolidated IFRS financial statements for 6M 2021 ended on 30 June 2021 • Publication of 2021 Sustainability Report • Publication of 2020 CDP Climate Change and Water Security Questionnaires • Barclays ESG Conference (digital meeting) on 8 September 2021 • JPM Emerging Markets Credit Conference (online) on 21–23 September 2021
Q4 2021	• Investor conference call on Q3 2021 financial and operating results • Q3 2021 quarterly results presentation • Q3 2021 financial results and trading update • Interim condensed consolidated IFRS financial statements for 9M 2021 ended on 30 September 2021 • Roadshow on the Eurobond issue, including a series of conference calls with current and potential investors, involving the Deputy Chairman of the Management Board for Economics and Finance and Chairman of the Board of Directors

FINANCIAL RESULTS

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THE COMPANY MAINTAINS FINANCIAL STABILITY AND PROVIDES SUFFICIENT CONDITIONS FOR ITS DEVELOPMENT IN THE LONG TERM.

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Building a better working world

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Independent auditor's report

To the Shareholders, Board of Directors and Management of Joint Stock Company "National Company "KazMunayGas"

Opinion

We have audited the consolidated financial statements of Joint Stock Company "National Company "KazMunayGas" and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2021, the consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at 31 December 2021 and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRSs).

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated financial statements section of our report. We are independent of the Group in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (including International Independence Standards) (IESBA Code) together with the ethical requirements that are relevant to our audit of the consolidated financial statements in the Republic of Kazakhstan, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

We have fulfilled the responsibilities described in the *Auditor's responsibilities for the audit of the consolidated financial statements section* of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the consolidated financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the accompanying consolidated financial statements.

Building a better working world

Key audit matter	How our audit addressed the key audit matter
Impairment of non-current assets	
We consider this matter to be one of the matters of most significance in our audit due to materiality of the balances of non-current assets, including upstream, exploration and evaluation, downstream assets and investments in upstream and midstream joint ventures and associates, to the consolidated financial statements, the high level of subjectivity in respect of assumptions underlying impairment analysis and significant judgements and estimates made by management. Significant assumptions included discount rates, oil and petroleum products prices forecasts and inflation and exchange rate forecasts. Significant estimates included production forecast, future capital expenditure and oil and gas reserves available for development and production. Information on non-current assets and the impairment tests performed is disclosed in *Note 4* to the consolidated financial statements.	We considered management's assessment of the existence of impairment indicators and where impairment indicators identified, we involved our business valuation specialists in the testing of impairment analysis and calculation of recoverable amounts performed by management. We analyzed the assumptions underlying management forecast. We compared oil and petroleum products prices used in the calculation of recoverable amounts to available market forecasts. We compared the discount rates and long-term growth rates to general market indicators and other available evidence. We tested the mathematical integrity of the impairment models and assessed the analysis of the sensitivity of the results of impairment tests to changes in assumptions. We performed procedures to assess competence, capabilities and objectivity of the external experts engaged by the Group to estimate the volumes of oil and gas reserves and prepare impairment models, where applicable. We analysed disclosures on impairment test in the consolidated financial statements.
Compliance with debt covenants In accordance with the terms of certain financing arrangements, the Group should comply with certain financial and non-financial covenants.	We examined the terms of financing arrangements and analysed financial and non-financial covenants and terms of early repayment. We compared data used in the calculations with the financial statements. We tested mathematical accuracy of financial covenants calculations.

Building a better working world

There is a higher likelihood that covenants impacted by trading volumes, revenue and profit may be breached particularly in subsidiaries impacted by volatility of oil prices and higher operating expenses, therefore, we focused on this area during our audit. Breaching covenants could result in funding shortages. Compliance with the financing covenants is one of the matters of most significance in the audit since it can have a major impact on the going concern assumption used in the preparation of the consolidated financial statements, and on classification of interest-bearing liabilities in the consolidated statement of financial position.

Information on compliance with covenants is disclosed in *Note 25* to the consolidated financial statements.

We analysed the disclosures in respect of debt covenants compliance in the consolidated financial statements of the Group.

Disposal of KazTransGas

In November 2021, the Group signed a share sale and purchase agreement (the SPA) for a 100% interest in KazTransGas JSC ("KTG") with Samruk-Kazyna JSC, the parent company, for 1 Tenge.

This matter is one of the matters of most significance in our audit due to the complexity of transaction and size of the assets and liabilities being disposed off.

Information about discontinued operations is disclosed in *Note 5* to the consolidated financial statements; a description of accounting policy is included in *Note 3* to the consolidated financial statements.

We analyzed the structure of this transaction. We examined the SPA and other documents related to this transaction and gained an understanding of the main terms of the transaction.

We analyzed the accounting for the transaction against the criteria set out in IFRS 5.

We evaluated the disposal accounting applied, recalculated the financial result from the disposal and compared it with the financial result from the discontinued operations presented in the consolidated financial statements.

We also considered the relevant disclosures in the consolidated financial statements and the allocation between continuing and discontinued operations.

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Other information included in the Group's 2021 annual report

Other information consists of the information included in the Group's 2021 Annual Report, other than the consolidated financial statements and our auditor's report thereon. Management is responsible for the other information. The Group's 2021 Annual Report is expected to be made available to us after the date of this auditor's report.

Our opinion on the consolidated financial statements does not cover the other information and we will not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information, when it becomes available, and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

Responsibilities of management and the Audit Committee for the consolidated financial statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRSs, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

The Audit Committee is responsible for overseeing the Group's financial reporting process.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

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As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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We communicate with the Audit Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Audit Committee with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with the Audit Committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The partner in charge of the audit resulting in this independent auditor's report is Kairat Medetbayev.

Ernst & Young LLP

Kairat Medetbayev
Auditor

Auditor qualification certificate
No. МФ-0000137 dated 8 February 2013

Ruslamzhan Sattarov
General Director
Ernst and Young LLP

State audit license for audit activities on the territory of the Republic of Kazakhstan: series МФЮ-2 No. 0000003 issued by the Ministry of finance of the Republic of Kazakhstan on 15 July 2005

050060, Republic of Kazakhstan, Almaty
Al-Farabi ave., 77/7, Esentai Tower

4 March 2022

CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2021

WITH INDEPENDENT AUDITOR'S REPORT

MARCH 4, 2022

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

		For the years ended December 31	
In millions of tenge	**Note**	**2021**	**2020 (restated)[1]**
Revenue and other income			
Revenue	6	**5,838,793**	3,624,964
Share in profit of joint ventures and associates, net	7	**768,733**	280,815
Finance income	14	**84,599**	87,987
Gain on sale of joint ventures		**19,835**	–
Other operating income		**30,779**	19,020
Total revenue and other income		**6,742,739**	**4,012,786**
Costs and expenses			
Cost of purchased oil, gas, petroleum products and other materials	8	**(3,596,491)**	(1,901,236)
Production expenses	9	**(693,031)**	(656,178)
Taxes other than income tax	10	**(428,639)**	(254,322)
Depreciation, depletion and amortization	33	**(322,068)**	(317,427)
Transportation and selling expenses	11	**(131,912)**	(137,144)
General and administrative expenses	12	**(148,478)**	(146,625)
Impairment of property, plant and equipment, exploration and evaluation assets, intangible assets and assets classified as held for sale	13	**(20,724)**	(243,893)
Exploration expenses	13	**(79,083)**	(19,807)
Impairment of investment in joint venture and associate	19	**(64)**	(30,654)
Finance costs	14	**(249,265)**	(265,372)
Net foreign exchange gain/(loss)		**17,781**	(16,189)
Other expenses		**(24,510)**	(28,094)
Total costs and expenses		**(5,676,484)**	**(4,016,941)**

[1] Certain numbers shown here do not correspond to the consolidated financial statements for the year ended December 31, 2020 and reflect adjustments made, refer to Note 5.

		For the years ended December 31	
Profit/(loss) before income tax		**1,066,255**	**(4,155)**
Income tax expenses	29	**(221,393)**	(85,276)
Profit/(loss) for the year from continuing operations		**844,862**	(89,431)
Discontinued operations			
Profit after income tax for the year from discontinued operations	5	**352,478**	261,328
Net profit for the year		**1,197,340**	**171,897**
Net profit/(loss) for the year attributable to:			
Equity holders of the Parent Company		**1,215,561**	273,237
Non-controlling interest		**(18,221)**	(101,340)
		1,197,340	171,897
Other comprehensive income/(loss)			
Other comprehensive income/(loss) to be reclassified to profit or loss in subsequent periods			
Hedging effect		**10,055**	(25)
Exchange differences on translation of foreign operations		**126,673**	450,936
Tax effect		**(11,818)**	(36,481)
Net other comprehensive income to be reclassified to profit or loss in the subsequent periods, net of tax		**124,910**	**414,430**
Other comprehensive gain/(loss) not to be reclassified to profit or loss in subsequent periods			
Actuarial gain/(loss) on defined benefit plans of the Group, net of tax		**5,959**	(10,592)
Actuarial loss on defined benefit plans of the joint ventures, net of tax		**(169)**	(285)
Tax effect		**(48)**	108
Net other comprehensive gain/(loss) not to be reclassified to profit or loss in the subsequent periods, net of tax		**5,742**	**(10,769)**
Net other comprehensive income for the year, net of tax		**130,652**	**403,661**
Total comprehensive income for the year, net of tax		**1,327,992**	**575,558**
Total comprehensive income/(loss) for the year attributable to:			
Equity holders of the Parent Company		**1,344,408**	677,742
Non-controlling interest		**(16,416)**	(102,184)
		1,327,992	575,558
Earnings per share[2] – tenge thousands			
Basic and diluted	24	**1.963**	0.282
Basic and diluted, from continuing operations		**1.385**	(0.147)
Basic and diluted, from discontinued operations		**0.578**	0.428

Deputy Chairman of the Management Board for Economy and Finance

D.S. Karabayev

Chief accountant

A.S. Yesbergenova

[2] The number of ordinary shares as of December 31, 2021 and 2020 equaled to 610,119,493.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

In millions of tenge		As at December 31	
	Note	2021	2020
Assets			
Non-current assets			
Property, plant and equipment	15	**3,405,980**	4,369,745
Right-of-use assets		**40,551**	53,661
Exploration and evaluation assets	16	**43,541**	158,385
Investment property		**19,711**	22,826
Intangible assets	17	**182,222**	168,481
Long-term bank deposits	18	**56,058**	56,528
Investments in joint ventures and associates	19	**6,550,384**	6,471,021
Deferred income tax assets	29	**34,035**	58,590
VAT receivable		**11,972**	94,481
Advances for non-current assets		**40,845**	23,343
Loans and receivables due from related parties	22	**142,394**	684,610
Other non-current financial assets		**13,248**	11,651
Other non-current non-financial assets		**4,784**	3,542
		10,545,725	12,176,864
Current assets			
Inventories	20	**259,497**	228,065
VAT receivable		**24,845**	106,695
Income tax prepaid	29	**24,900**	70,301
Trade accounts receivable	21	**418,255**	422,821
Short-term bank deposits	18	**510,513**	282,472
Loans and receivables due from related parties	22	**485,765**	27,795
Other current financial assets	21	**329,503**	57,071
Other current non-financial assets	21	**76,614**	88,821
Cash and cash equivalents	23	**975,849**	1,145,864
		3,105,741	2,429,905
Assets classified as held for sale	15	**795**	46,518
		3,106,536	2,476,423
Total assets		**13,652,261**	**14,653,287**
Equity and liabilities			
Equity			
Share capital	24	**916,541**	916,541
Additional paid-in capital	24	**1,142**	8,981
Other equity		**10,113**	58
Currency translation reserve		**2,260,533**	2,146,035
Retained earnings		**5,059,634**	5,636,705
Attributable to equity holders of the Parent Company		**8,247,963**	**8,708,320**
Non-controlling interest	24	**(89,282)**	(71,641)
Total equity		**8,158,681**	**8,636,679**

In millions of tenge		As at December 31	
	Note	2021	2020
Non-current liabilities			
Borrowings	25	**3,261,347**	3,716,892
Provisions	26	**222,936**	303,154
Deferred income tax liabilities	29	**545,763**	555,894
Lease liabilities		**36,106**	45,499
Other non-current financial liabilities		**15,915**	32,963
Other non-current non-financial liabilities		**39,229**	28,831
		4,121,296	4,683,233
Current liabilities			
Borrowings	25	**484,980**	361,556
Provisions	26	**22,309**	63,235
Income tax payable	29	**6,882**	8,967
Trade accounts payable	27	**519,201**	536,922
Other taxes payable	28	**126,424**	130,263
Lease liabilities		**8,988**	16,971
Other current financial liabilities	27	**69,231**	86,440
Other current non-financial liabilities	27	**134,269**	129,021
		1,372,284	1,333,375
Total liabilities		**5,493,580**	**6,016,608**
Total equity and liabilities		**13,652,261**	**14,653,287**
Book value per ordinary share – tenge thousands	24	**13,074**	13,880

Deputy Chairman of the Management Board for Economy and Finance

D.S. Karabayev

Chief accountant

A.S. Yesbergenova

CONSOLIDATED STATEMENT OF CASH FLOWS

In millions of tenge		For the years ended December 31	
	Note	2021	2020 (restated)[1]
Cash flows from operating activities			
Profit/(loss) before income tax from continuing operations		**1,066,255**	(4,155)
Profit before income tax from discontinued operations		**407,993**	282,355
Profit before income tax		**1,474,248**	**278,200**
Adjustments:			
Depreciation, depletion and amortization	33	**322,068**	317,427
Depreciation, depletion and amortization from discontinued operations	5	**63,502**	42,856
Impairment of property, plant and equipment, exploration and evaluation assets, intangible assets and assets classified as held for sale	13	**20,724**	243,694
Exploration expenses	13	**79,083**	19,807
Impairment of investments in joint venture and associate	19	**64**	30,654
Unrealized losses from derivatives on petroleum products		**–**	626
Realized losses/(gains) from derivatives on petroleum products		**14,954**	(22,946)
Finance income	14	**(84,599)**	(87,987)
Finance income from discontinued operations		**(19,750)**	(21,766)
Finance costs	14	**249,265**	265,372
Finance costs from discontinued operations		**36,330**	32,179
Gain on sale of joint venture		**(19,835)**	–
Share in profit of joint ventures and associates, net	7	**(768,733)**	(280,815)
Share in profit of joint ventures and associates from discontinued operations, net		**(275,100)**	(230,380)
Movements in provisions		**(140,318)**	(43,174)
Net foreign exchange (gain)/loss		**(6,565)**	45,388
Allowance for obsolete inventories		**4,091**	357
(Gain)/loss on disposal of property, plant and equipment, intangible assets, investment property and assets held for sale, net		**(2,259)**	6,508
(Reversal)/accrual of impairment of VAT receivable		**(5,144)**	6,435
Change in financial guarantees		**3,527**	6,288
VAT that could not be offset		**2,599**	4,528
Allowance of expected credit loss for trade receivables and other financial assets		**3,453**	4,225
Other adjustments		**427**	(267)
Operating profit before working capital changes		**952,032**	**617,209**
Change in VAT receivable		**73,253**	(3,993)
Change in inventory		**(90,603)**	82,337
Change in trade accounts receivable and other current assets		**(124,957)**	121,837
Change in trade and other payables and contract liabilities		**227,645**	(305,380)
Change in other taxes payable		**(52,580)**	34,066
Cash generated from operations		**984,790**	**546,076**

[1] Certain numbers shown here do not correspond to the consolidated financial statements for the year ended December 31, 2020 and reflect adjustments made, refer to Note 5.

In millions of tenge		For the years ended December 31	
	Note	2021	2020 (restated)[1]
Dividends received from joint ventures and associates	19	**415,359**	134,772
Net payment of derivative instruments		**–**	(142)
Income taxes paid		**(111,373)**	(87,984)
Interest received		**39,496**	90,798
Interest paid		**(249,775)**	(236,987)
Net cash flow from operating activities		**1,078,497**	**446,533**
Cash flows from investing activities			
Placement of bank deposits		**(819,226)**	(581,666)
Withdrawal of bank deposits		**585,614**	685,773
Purchase of property, plant and equipment, intangible assets and exploration and evaluation assets		**(409,660)**	(396,406)
Proceeds from sale of property, plant and equipment, exploration and evaluation assets and assets held for sale		**71,084**	50,738
Proceeds from disposal of subsidiaries, net of cash disposed		**(375,910)**	8,710
Additional contributions to joint ventures without changes in ownership		**(1,926)**	(6,586)
Proceeds from disposal of joint ventures		**17,169**	5,966
Loans given to related parties	30	**(73,274)**	(57,485)
Repayment of loans due from related parties	30	**24,438**	72,721
Acquisition of debt securities		**(14,741)**	(928)
Proceeds from sale of debt securities		**10,528**	636
Proceeds from Note receivable from a shareholder of a joint venture		**–**	11,512
Other		**(2,790)**	1,404
Net cash flows used in investing activities		**(988,694)**	**(205,611)**
Cash flows from financing activities			
Proceeds from borrowings	25	**451,096**	676,979
Repayment of borrowings	25	**(339,552)**	(807,355)
Reservation of cash for payment of borrowings[2]		**(292,258)**	–
Dividends paid to Samruk-Kazyna and National Bank of RK	24	**(49,999)**	(81,738)
Dividends paid to non-controlling interests	24	**(5,756)**	(4,553)
Distributions to Samruk-Kazyna	24	**(534)**	(7,987)
Share buyback by subsidiary		**–**	(212)
Payment under financial guarantee		**–**	(1,383)
Payment of principal lease liabilities		**(45,530)**	(18,978)
Net cash flows used in financing activities		**(282,533)**	**(245,227)**
Effects of exchange rate changes on cash and cash equivalents		**22,851**	85,341
Change in allowance for expected credit losses		**(136)**	376
Net change in cash and cash equivalents		**(170,015)**	**81,412**
Cash and cash equivalents, at the beginning of the year		**1,145,864**	**1,064,452**
Cash and cash equivalents, at the end of the year		**975,849**	**1,145,864**

Deputy Chairman of the Management Board for Economy and Finance

D.S. Karabayev

Chief accountant

A.S. Yesbergenova

[2] In June and November 2021, the Group made reservation of cash in total amount of 292,258 million tenge for repayment of loan from The Export-Import Bank of China, including interest accrued. The loan was repaid in July 2021 for 32,799 million tenge (Note 25) and in January 2022 for 259,459 million tenge (Note 21 and 25). Repayment of the loan was treated as non-cash transaction.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

In millions of tenge	Share capital	Additional paid-in capital	Other equity
As at December 31, 2019	**916,541**	**40,794**	**83**
Net profit/(loss) for the year	–	–	–
Other comprehensive income/(loss)	–	–	(25)
Total comprehensive income/(loss)	**–**	**–**	**(25)**
Dividends (Note 24)	–	–	–
Distributions to Samruk-Kazyna (Note 24)		–	–
Transactions with Samruk-Kazyna (Note 24)	–	–	–
Transfer of pipelines contributed by the Government due to termination of the trust management agreement (Note 24)	–	(17,323)	–
Transfer of difference between par and fair value of the loan received from Samruk-Kazyna by the Company due to settlement (Note 24)	–	(10,971)	–
Transfer of excess of fair value over nominal value of the loan receivable, contributed by Samruk-Kazyna due to settlement (Note 24)	–	(3,519)	–
Reserve for put option of non-controlling interest holder of a subsidiary	–	–	–
Share buyback by subsidiary	–	–	–
As at December 31, 2020	**916,541**	**8,981**	**58**
As at December 31, 2020	916,541	8,981	58
Net profit/(loss) for the year	–	–	–
Other comprehensive income	–	–	10,055
Total comprehensive income/(loss)	**–**	**–**	**10,055**
Dividends (Note 24)	**–**	**–**	**–**
Distributions to Samruk-Kazyna (Note 24)	**–**	**–**	**–**
Transactions with Samruk-Kazyna (Note 24)	**–**	**–**	**–**
Transfer of KazTransGas to Samruk-Kazyna (Note 5)	**–**	**(7,839)**	**–**
Equity contribution to subsidiary	**–**	**–**	**–**
As at December 31, 2021	**916,541**	**1,142**	**10,113**

	Attributable to equity holders of the Parent Company			Non-controlling interest	Total
	Currency translation reserve	Retained earnings	Total		
	1,731,747	**5,469,236**	**8,158,401**	**38,255**	**8,196,656**
	–	273,237	273,237	(101,340)	171,897
	414,288	(9,758)	404,505	(844)	403,661
	414,288	**263,479**	**677,742**	**(102,184)**	**575,558**
	–	(81,738)	(81,738)	(4,856)	(86,594)
	–	(7,763)	(7,763)	–	(7,763)
	–	(11,617)	(11,617)	–	(11,617)
	–	1,205	(16,118)	–	(16,118)
	–	10,971	–	–	–
	–	3,519	–	–	–
	–	(10,750)	(10,750)	(2,481)	(13,231)
	–	163	163	(375)	(212)
	2,146,035	**5,636,705**	**8,708,320**	**(71,641)**	**8,636,679**
	2,146,035	5,636,705	8,708,320	(71,641)	8,636,679
	–	1,215,561	1,215,561	(18,221)	1,197,340
	114,498	4,294	128,847	1,805	130,652
	114,498	**1,219,855**	**1,344,408**	**(16,416)**	**1,327,992**
	–	**(49,999)**	**(49,999)**	**(6,192)**	**(56,191)**
	–	**(85)**	**(85)**	**–**	**(85)**
	–	**(5,222)**	**(5,222)**	**–**	**(5,222)**
	–	**(1,741,620)**	**(1,749,459)**	**–**	**(1,749,459)**
	–	**–**	**–**	**4,967**	**4,967**
	2,260,533	**5,059,634**	**8,247,963**	**(89,282)**	**8,158,681**

Deputy Chairman of the Management Board for Economy and Finance

D.S. Karabayev

Chief accountant

A.S. Yesbergenova

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. GENERAL

Joint stock company “National Company “KazMunayGas” (the Company, JSC NC “KazMunayGas“ or Parent Company) is oil and gas enterprise of the Republic of Kazakhstan (RK), which was established on February 27, 2002 as a closed joint stock company pursuant to the Decree No. 811 of the President of the Republic of Kazakhstan dated February 20, 2002 and the resolution of the Government of the RK (further the Government) No. 248 dated February 25, 2002. The Company was formed as a result of the merger of closed joint stock companies “National Oil and Gas Company Kazakhoil” and “National Company Transport Nefti i Gaza”. As the result of the merger, all assets and liabilities, including ownership interest in all entities owned by these companies, have been transferred to the Company. The Company was reregistered as a joint stock company in accordance with the legislation of the RK in March 2004.

Starting from June 8, 2006, the sole shareholder of the Company was joint stock company “Kazakhstan Holding Company for State Assets Management “Samruk”, which in October 2008 was merged with the state owned Sustainable Development Fund “Kazyna” and formed joint stock company “National Welfare Fund Samruk-Kazyna”, now renamed to joint stock company “Sovereign Wealth Fund Samruk-Kazyna” (further Samruk-Kazyna). The Government is the sole shareholder of Samruk Kazyna. On August 7, 2015, the National Bank of RK purchased 9.58% plus one share of the Company from Samruk-Kazyna.

As at December 31, 2021, the Company has interest in 60 operating companies (as of December 31, 2020: 61) (jointly “the Group”).

The Company has its registered office in the RK, Nur-Sultan, Dinmukhamed Kunayev, 8.

The principal activity of the Group includes, but is not limited, to the following:

- Participation in the development and implementation of the uniform public policy in the oil and gas sector;
- Representation of the state interests in subsoil use contracts through interest participation in those contracts; and
- Corporate governance and monitoring of exploration, development, production, oil servicing, processing, petrochemistry, transportation and sale of hydrocarbons and the designing, construction and maintenance of oil-and-gas pipeline and field infrastructure.

The consolidated financial statements comprise the financial statements of the Company and its controlled subsidiaries (Note 3).

These consolidated financial statements of the Group were approved for issue by the Deputy Chairman of the Management Board for Economy and Finance and the Chief accountant on March 4, 2022.

2. BASIS OF PREPARATION

These consolidated financial statements have been prepared on a historical cost basis, except as described in the accounting policies and the notes to these consolidated financial statements. All values in these consolidated financial statements are rounded to the nearest millions, except when otherwise indicated.

Statement of compliance

These consolidated financial statements of the Group have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by International Accounting Standards Board (IASB).

The preparation of the consolidated financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgment in the process of applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the Group consolidated financial statements are disclosed in Note 4.

In course of preparation of these consolidated financial statements the Group management considered the current international economic environment including complex of uncertainties due to COVID-19 pandemic. The consolidated financial statements were prepared on a going concern basis.

Foreign currency translation

Functional and presentation currency

Items included in the financial statements of each of the Group's entities included in these consolidated financial statements are measured using the currency of the primary economic environment in which the entities operate (the functional currency). The consolidated financial statements are presented in Kazakhstan tenge (tenge or KZT), which is the Company's functional and presentation currency.

Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognized in the consolidated statement of comprehensive income.

Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rates as at the dates of the initial transactions. Non-monetary items measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value is determined.

Differences arising on settlement or translation of monetary items are recognized in profit or loss with the exception of monetary items that are designated as part of the hedge of the Group's net investment in foreign operation. These are recognized in other comprehensive income until the net investment is disposed of, at which time, the cumulative amount is reclassified to profit or loss. Tax charges and credits attributable to exchange differences on those monetary items are also recorded in other comprehensive income.

Group Companies

The results and financial position of all of the Group's subsidiaries, joint ventures and associates (none of which has the currency of a hyperinflationary economy) that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- Assets and liabilities for each statement of financial position presented are translated at the closing rate at that reporting date;
- Income and expenses for each statement of comprehensive income presented are translated at average exchange rates (unless this average is not a reasonable approximation of the cumulative effect of the rates prevailing on the transaction dates, in which case income and expenses are translated at the rate on the date of the transaction); and
- All resulting exchange differences are recognized as a separate component of other comprehensive income.

Exchange rates

Weighted average currency exchange rates established by the Kazakhstan Stock Exchange (KASE) are used as official currency exchange rates in the Republic of Kazakhstan. The currency exchange rate of KASE as at December 31, 2021 was 431.80 tenge to 1 United States dollar (US dollar). This rate was used to translate monetary assets and liabilities denominated in US dollar as at December 31, 2021 (2020: 420.91 tenge to 1 US dollar). The currency exchange rate of KASE as at March 4, 2022 was 499.20 tenge to 1 US dollar.

3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Changes in accounting policies and disclosures

New and amended standards and interpretations

The accounting policies adopted in the preparation of the consolidated financial statements are consistent with those followed in the preparation of the Group's annual consolidated financial statements for the year ended December 31, 2020, except for the adoption of new standards and interpretations effective as of January 1, 2021.

The following amendments were applied for the first time in 2021:

- Amendments to IFRS 9 Financial Instruments, IAS 39 Financial Instruments: Recognition and Measurement, IFRS 7 Financial Instruments: Disclosures, IFRS 4 Insurance Contracts and IFRS 16 Leases. The amendments provide temporary reliefs which address the financial reporting effects when an interbank offered rate (IBOR) is replaced with an alternative nearly risk-free interest rate (RFR). The amendments include the following practical expedients:
  - A practical expedient to require contractual changes, or changes to cash flows that are directly required by the reform, to be treated as changes to a floating interest rate, equivalent to a movement in a market rate of interest;
  - Permit changes required by IBOR reform to be made to hedge designations and hedge documentation without the hedging relationship being discontinued;
  - Provide temporary relief to entities from having to meet the separately identifiable requirement when an RFR instrument is designated as a hedge of a risk component.

These amendments had no impact on the consolidated financial statements of the Group:

- Amendments to IFRS 16 Leases in regards of COVID-19-related rent concessions. The amendments provide relief to lessees from assessment whether a COVID-19-related rent concession is a lease modification. The amendments did not have a material impact on the consolidated financial statements, as the Group has not received significant rent concessions related to pandemic.

Standards issued but not yet effective

In May 2017, the IASB issued IFRS 17 Insurance Contracts. IFRS 17 establishes a single framework for the accounting for insurance contracts and contains requirements for related disclosures. The new standard replaces IFRS 4 Insurance Contracts. In June 2020, the IASB issued amendments to IFRS 17 that address concerns and implementation challenges, and deferred the date of initial application to annual periods beginning on or after January 1, 2023. The Group does not expect the standard to have a material impact on the consolidated financial statements.

In January 2020, the IASB issued amendments to IAS 1 Presentation of Financial Statements named Classification of Liabilities as Current or Non-current. The amendments clarify requirements for classifying liabilities as current or non-current. The amendments are effective on or after January 1, 2023; earlier application is permitted. The Group does not expect the amendments to have a material impact on the consolidated financial statements, as the Group already applies criteria set by the amendments.

In May 2020, the IASB issued amendments to IFRS 3 Business Combinations named Reference to the Conceptual Framework. The amendments replace references to the Conceptual Framework for Financial Reporting with the current version issued in March 2018, without significantly changing the requirements of the standard. The amendments are effective on or after January 1, 2022; earlier application is permitted. The Group does not expect the amendments to have a material impact on the consolidated financial statements.

In May 2020, the IASB issued amendments to IAS 16 Property, Plant and Equipment named Property, Plant and Equipment: Proceeds Before Intended Use. The amendments prohibit entities from deducting from the cost of an item of property, plant and equipment any proceeds of the sale of items produced while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Instead, an entity recognizes the proceeds from selling such items, and the costs of producing those items, in profit or loss. The amendments are effective on or after January 1, 2022 and should be applied retrospectively. The Group does not expect the amendments to have a material impact on the consolidated financial statements.

In May 2020, the IASB issued amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets named Onerous Contracts − Costs of Fulfilling a Contract. The amendments specify which costs an entity needs to include when assessing whether a contract is onerous. The amendments are effective on or after January 1, 2022; earlier application is permitted. The Group does not expect the amendments to have a material impact on the consolidated financial statements.

In May 2021, the IASB issued amendments to IAS 12 Income Taxes named Deferred Tax Related to Assets and Liabilities arising from a Single Transaction. The amendments clarify the accounting for deferred tax on transactions in which equal amounts of deductible and taxable temporary differences arise on initial recognition. The amendments are effective on or after January 1, 2023; earlier application is permitted. The Group does not expect the amendments to have a material impact on the consolidated financial statements.

Additionally, a number of amendments, not yet effective, were issued during annual improvement process conducted by IASB. They include the amendments to IFRS 1 Fist-time Adoption named First-time Adoption: Subsidiary as a First-time Adopter, the amendments to IFRS 9 Financial Instruments named Fees in the ‘10 per cent’ Test for Derecognition of Financial Liabilities, the amendments to IFRS 16 Leases named Lease incentives and the amendments to IAS 41 Agriculture named Taxation in Fair Value Measurements. The Group does not expect the amendments to have a material impact on the consolidated financial statements.

Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2 Making Materiality Judgements. The amendments to IAS 1 require companies to disclose their material accounting policy information rather than their significant accounting policies. The amendments to IFRS Practice Statement 2 provide guidance on how to apply the concept of materiality to accounting policy disclosures.

Separately, the Board has also issued amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors. The amendments clarify how companies should distinguish changes in accounting policies from changes in accounting estimates. That distinction is important because changes in accounting estimates are applied prospectively only to future transactions and other future events, but changes in accounting policies are generally also applied retrospectively to past transactions and other past events.

The amendments to IAS 1 and IAS 8 will be effective for annual reporting periods beginning on or after 1 January 2023, with early application permitted.

The Group has not early adopted any standard, interpretation or amendment that has been issued but is not yet effective.

Basis of consolidation

The consolidated financial statements comprise the financial statements of the Company and its subsidiaries as of December 31, 2021. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Specifically, the Group controls an investee if and only if the Group has: power over the investee (i.e. existing rights that give it the current ability to direct the relevant activities of the investee); exposure, or rights, to variable returns from its involvement with the investee, and; the ability to use its power over the investee to affect its returns.

Generally, there is a presumption that a majority of voting rights result in control. To support this presumption and when the Group has less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including: the contractual arrangement with the other vote holders of the investee; rights arising from other contractual arrangements; the Group's voting rights and potential voting rights.

The Group re-assesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control over the subsidiary. Assets, liabilities, revenue and expenses of a subsidiary acquired or disposed of during the year are included in the consolidated statement of comprehensive income from the date the Group gains control until the date the Group ceases to control the subsidiary.

The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. Profit or loss and each component of other comprehensive income are attributable to the equity holders of the parent of the Group and to the non-controlling interests, even if this results in the non-controlling interest having a deficit balance. When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with the Group's accounting policies. All intra-group balances, transactions, unrealized gains and losses resulting from intra-group transactions and dividends are eliminated in full on consolidation. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If the Group loses control over a subsidiary, it derecognizes the related assets (including goodwill), liabilities, non-controlling interest and other components of equity while any resultant gain or loss is recognized in profit or loss. Any investment retained is recognized at fair value.

Subsidiaries

As at December 31, 2021 and 2020, the following direct significant subsidiaries were included in these consolidated financial statements:

Significant entities	Main activity	Country of incorporation	Percentage ownership	
			2021	**2020**
KazMunayGas Exploration Production JSC	Exploration and production	Kazakhstan	**99.72%**	99.72%
KazMunayTeniz LLP	Exploration and production	Kazakhstan	**100 %**	100 %
KMG Karachaganak LLP	Exploration and production	Kazakhstan	**100 %**	100 %
Kazakhturkmunay LLP	Exploration and production	Kazakhstan	**100 %**	100 %
KazTransOil JSC	Oil transportation	Kazakhstan	**90 %**	90 %
KazMorTransFlot LLP	Oil transportation and construction	Kazakhstan	**100 %**	100 %
KazTransGas JSC (Note 5)	Gas transportation	Kazakhstan	**–**	100 %
Cooperative KazMunayGas PKI U.A.	Refinery and marketing of oil products	Netherlands	**100 %**	100 %
Atyrau Refinery LLP	Refinery	Kazakhstan	**99.53%**	99.53%
Pavlodar oil chemistry refinery LLP	Refinery	Kazakhstan	**100 %**	100 %
KMG International N.V.	Refinery and marketing of oil products	Romania	**100 %**	100 %
KMG Drilling&Services LLP	Drilling services	Kazakhstan	**100 %**	100 %

Business combinations and goodwill

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at acquisition date fair value and the amount of any non-controlling interest in the acquiree. For each business combination, the acquirer measures the non-controlling interest in the acquiree either at fair value or at the proportionate share of the acquiree's identifiable net assets. Acquisition costs incurred are expensed and included in general and administrative expenses.

When the Group acquires a business, it assesses the financial assets acquired and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as at the acquisition date. This includes the separation of embedded derivatives in host contracts by the acquiree.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value at the acquisition date. Contingent consideration classified as an asset or liability that is a financial instrument and within the scope of IFRS 9 Financial Instruments, is measured at fair value with changes in fair value recognized in the statement of profit or loss in accordance with IFRS 9. If the contingent consideration is not within the scope of IFRS 9, it is measured at fair value through profit and loss. Contingent consideration that is classified as equity is not remeasured and its subsequent settlement is accounted for within equity.

Goodwill is initially measured at cost, being the excess of the aggregate of the consideration transferred and the amount recognized for non-controlling interests, and any previous interest held, over the net identifiable assets acquired and liabilities assumed. If the fair value of the net assets acquired is in excess of the aggregate consideration transferred, the Group re-assesses whether it has correctly identified all of the assets acquired and all of the liabilities assumed and reviews the procedures used to measure the amounts to be recognized at the acquisition date. If the reassessment still results in an excess of the fair value of net assets acquired over the aggregate consideration transferred, then the gain is recognized in profit or loss.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's cash-generating units that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill forms part of a cash-generating unit and part of the operation within that unit is disposed of, the goodwill associated with the operation disposed of is included in the carrying amount of the operation when determining the gain or loss on disposal of the operation. Goodwill disposed in this circumstance is measured based on the relative values of the operation disposed of and the portion of the cash-generating unit retained.

Business combinations achieved in stages

The acquisition date fair value of the acquirer's previously held equity interest in the acquiree is remeasured to fair value at the acquisition date through profit or loss.
In a business combination achieved in stages the acquirer recognizes goodwill as of the acquisition date measured as the excess of (1) over (2) below:

1. The aggregate of: (i) the consideration transferred measured in accordance with this IFRS 3 Business Combinations, which generally requires acquisition-date fair value; (ii) the amount of any non-controlling interest in the acquiree measured in accordance with this IFRS; and (iii) the acquisition-date fair value of the acquirer's previously held equity interest in the acquiree;
2. The net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed.

Acquisition of subsidiaries from parties under common control

Acquisitions of subsidiaries from parties under common control are accounted for using the pooling of interest method.

The assets and liabilities of the subsidiary transferred under common control are recorded in the consolidated financial statements at the carrying amounts of the transferring entity (the Predecessor) at the date of the transfer. Related goodwill, if any, inherent in the Predecessor's original acquisition is also recorded in the consolidated financial statements. Any difference between the total book value of net assets, including the Predecessor's goodwill, and the consideration paid is accounted for in the consolidated financial statements as an adjustment to equity.

The consolidated financial statements, including corresponding figures, are presented as if the subsidiary had been acquired by the Group on the date it was originally acquired by the Predecessor.

Joint operations

A joint operation is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets and obligations for the liabilities, relating to the arrangement. In relation to its interests in joint operations, the Group recognizes its: Assets, including its share of any assets held jointly; Liabilities, including its share of any liabilities incurred jointly; Revenue from the sale of its share of the output arising from the joint operation; Share of the revenue from the sale of the output by the joint operation; Expenses, including its share of any expenses incurred jointly.

Investment in associates and joint ventures

An associate is an entity over which the Group has significant influence. Significant influence is the power to participate in the financial and operating policy decisions of the investee, but which does not comprise control or joint control over those policies.

A joint venture is a type of joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control. Under contractual arrangement that establishes joint control the Group may own less than 50% of shares in joint ventures.

The considerations made in determining significant influence or joint control are similar to those necessary to determine control over subsidiaries. The Group's investments in its joint venture and associates are accounted for using the equity method.

Under the equity method, the investment in a joint venture or an associate is initially recognized at cost. The carrying amount of the investment is adjusted to recognize changes in the Group's share of net assets of the joint venture or associate since the acquisition date. Goodwill relating to the joint venture or associate is included in the carrying amount of the investment and is neither amortized nor individually tested for impairment.

The consolidated statement of comprehensive income reflects the Group's share of the results of operations of the joint venture or associate. Any change in other comprehensive income of those investees is presented as part of the Group's other comprehensive income. In addition, when there has been a change recognized directly in the equity of the joint venture or associate, the Group recognizes its share of any changes, when applicable, in the consolidated statement of changes in equity. Unrealized gains and losses resulting from transactions between the Group and the joint venture or associate are eliminated to the extent of the interest in the joint venture or associate.

The aggregate of the Group's share in profit or loss of a joint venture and an associate is shown on the face of the consolidated statement of comprehensive income and represents profit or loss after tax and non-controlling interest in the subsidiaries of the joint venture or associate. The financial statements of the joint venture or associate are prepared for the same reporting period as the Group. When necessary, adjustments are made to bring their accounting policies in line with those of the Group.

After application of the equity method, the Group determines whether it is necessary to recognize an impairment loss on its investment in its joint venture or associate. At each reporting date, the Group determines whether there is objective evidence that the investment in the joint venture or associate is impaired. If there is such evidence, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate or joint venture and its carrying value, and then recognizes the loss as "Impairment of investment in joint venture and associate" in the consolidated statement of comprehensive income.

Upon loss of joint control over the joint venture or significant influence over the associate, the Group measures and recognizes any retained investment at its fair value. Any difference between the carrying amount of the joint venture or associate upon loss of joint control or significant influence and the fair value of the retained investment and proceeds from disposal is recognized in profit or loss.

Current versus non-current classification

The Group presents assets and liabilities in the consolidated statement of financial position based on current/non-current classification. An asset is classified as current when it is: expected to be realized or intended to sold or consumed in normal operating cycle; held primarily for the purpose of trading; expected to be realized within 12 (twelve) months after the reporting period; or it is cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least 12 (twelve) months after the reporting period. All other assets are classified as non-current.

A liability is classified as current when it is: expected to be settled in normal operating cycle; held primarily for the purpose of trading; due to be settled within 12 (twelve) months after the reporting period; or there is no unconditional right to defer the settlement of the liability for at least 12 (twelve) months after the reporting period. The Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are always classified as non current assets and liabilities.

Oil and natural gas exploration, evaluation and development expenditure

Costs incurred before obtaining subsoil use rights (licenses)

Costs incurred before obtaining full subsoil use rights (licenses) are expensed in the period in which they are incurred, except when costs are incurred after signing preliminary agreements with the Government of RK, in such cases costs incurred after this date are capitalized in exploration and evaluation assets.

Subsoil use rights and property acquisition costs

Exploration and production subsoil use rights and related property acquisition costs are capitalized within exploration and evaluation assets and subclassified as intangible. Each property under exploration and appraisal is reviewed on an annual basis to confirm that drilling activity is planned and it is not impaired. If no future activity is planned, the carrying amount of the exploration subsoil use right and related property acquisition costs is written off. Upon determination of economically recoverable reserves ('proved reserves' or 'commercial reserves') and internal approval of development, the carrying amount of the subsoil use right and related property acquisition costs held on a field by field basis is aggregated with exploration and evaluation assets and transferred to oil and gas assets or intangible assets.

Exploration and evaluation costs

Once the legal right to explore has been acquired, geological and geophysical exploration costs and costs directly associated with exploration and appraisal wells, including unsuccessful development or delineation wells are capitalized as exploration and evaluation intangible or tangible assets, according to the nature of the costs, until the drilling of the well is complete and the results have been evaluated. These costs include employee remuneration, materials and fuel used, rig costs and payments made to contractors. If no expected reserves are found, the exploration and evaluation asset is tested for impairment. If extractable hydrocarbons are found and, subject to further appraisal activity, which may include the drilling of further wells, are likely to be developed commercially; the costs continue to be carried as an asset while sufficient/continued progress is made in assessing the commerciality of the hydrocarbon reserves. All such carried costs are subject to technical, commercial and management review as well as review for impairment at least once a year to confirm the continued intent to develop or otherwise extract value from the discovery.

When proved reserves of hydrocarbons are determined and development is sanctioned, the relevant expenditure is transferred to oil and gas assets after impairment is assessed and impairment loss recognized, if any.

When this is no longer the case, and the Group decides to relinquish the contract territory to the Government and terminate the subsoil use contracts, the assets are written off.

Development costs

Expenditures on the construction, installation or completion of infrastructure facilities such as platforms, pipelines and the drilling of development wells, are capitalized within oil and gas assets.

Oil and gas assets and other property, plant and equipment

Oil and gas assets and other property, plant and equipment are stated at cost less accumulated depreciation, depletion and impairment.

The initial cost of an asset comprises its purchase price or construction cost, borrowing cost for long-term construction or development project, if recognition criteria is met, any costs directly attributable to bringing the asset into operation and the initial estimate of decommissioning obligation, if there is any. The purchase price or construction cost is the aggregate amount paid and the fair value of any other consideration given to acquire the asset.

Oil and gas assets are depreciated using a unit-of-production method, whereas tangible assets are depreciated over proved developed reserves and intangible assets – over proved reserves. Certain oil and gas assets with useful lives less than the remaining life of the fields or term of the subsoil use contracts are depreciated on a straight-line basis over useful lives.

Property, plant and equipment other than oil and gas assets and land principally comprise buildings, machinery and equipment, vehicles and others that are depreciated on a straight-line basis over the expected remaining useful average lives as follows:

Refinery assets	4-100 years
Pipelines	2-30 years
Buildings and improvements	2-100 years
Machinery and equipment	2-30 years
Vehicles	3-35 years
Other	2-20 years
Land	Not depreciated

The expected useful lives of property, plant and equipment are reviewed on an annual basis and, if necessary, changes in useful lives are accounted for prospectively.

The carrying value of property, plant and equipment is reviewed for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable.

An item of property, plant and equipment, inclusive of production wells which stop producing commercial quantities of hydrocarbons and are scheduled for abandonment, is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the item) is included in the profit or loss in the period the item is derecognized.

Intangible assets

Intangible assets are stated at cost, less accumulated amortization and accumulated impairment losses. Intangible assets include expenditure on acquiring subsoil use rights for oil and natural gas exploration, evaluation and development, computer software and goodwill. Intangible assets acquired separately from a business are carried initially at cost. The initial cost is the aggregate amount paid and the fair value of any other consideration given to acquire the asset.

Intangible assets, except for goodwill and subsoil use rights, are amortized on a straight-line basis over the expected remaining useful life. The expected useful lives of the assets are reviewed on an annual basis and, if necessary, changes in useful lives are accounted for prospectively. Computer software costs have an estimated useful life of 3 to 7 years.

The carrying value of intangible assets is reviewed for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable. Goodwill is tested for impairment annually (as at December 31) and when circumstances indicate that the carrying value may be impaired.

Impairment is determined for goodwill by assessing the recoverable amount of each cash-generating unit (or group of cash-generating units) to which the goodwill relates. Where the recoverable amount of the cash generating unit is less than their carrying amount an impairment loss is recognized. Impairment losses relating to goodwill cannot be reversed in future periods.

Impairment of non-financial assets

The Group assesses at each reporting date whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Group estimates the asset's recoverable amount. An asset's recoverable amount is the higher of an asset's or cash-generating unit's (CGU) fair value less costs to sell and its value in use and is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

In determining fair value less costs to sell, an appropriate valuation model is used. These calculations are corroborated by valuation multiples, quoted share prices for publicly traded subsidiaries or other available fair value indicators. Impairment losses of continuing operations are recognized in the consolidated statement of comprehensive income in those expense categories consistent with the function of the impaired asset.

The Group bases its impairment calculation on detailed budgets and forecast calculations, which are prepared separately for each of the Group's CGUs to which the individual assets are allocated. These budgets and forecast calculations generally cover a period of 5 (five) years. For longer periods, a long-term growth rate is calculated and applied to projected future cash flows after the fifth year.

For assets excluding goodwill, an assessment is made at each reporting date as to whether there is any indication that previously recognized impairment losses may no longer exist or may have decreased. If such indication exists, the Group estimates the asset's or cash-generating unit's recoverable amount. A previously recognized impairment loss is reversed only if there has been a change in the assumptions used to determine the asset's recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of accumulated depreciation, had no impairment loss been recognized for the asset in prior years. Such reversal is recognized in the consolidated statement of comprehensive income.

Impairment of exploration and evaluation assets

Exploration and evaluation assets are tested for impairment when reclassified to oil and gas development tangible or intangible assets or whenever facts and circumstances indicate impairment.

One or more of the following facts and circumstances indicate that the Group should test exploration and evaluation assets for impairment (the list is not exhaustive):
- The period for which the Group entity has the right to explore and appraise in the specific area has expired during the period or will expire in the near future, and is not expected to be renewed;
- Substantive expenditure on the further exploration for and evaluation of hydrocarbon resources in the specific area is neither budgeted nor planned;
- Exploration for and evaluation of hydrocarbon resources in the specific area have not led to the discovery of commercially viable quantities of hydrocarbon resources and the Group entity has decided to discontinue such activities in the specific area;
- Sufficient data exist to indicate that, although a development in the specific area is likely to proceed, the carrying amount of the exploration and evaluation asset is unlikely to be recovered in full from successful development or by sale.

Non-current assets held for sale and discontinued operations

Non-current assets and disposal groups classified as held for sale are measured at the lower of their carrying amount and fair value less costs to sell. Non-current assets and disposal groups are classified as held for sale if their carrying amounts will be recovered principally through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the asset or disposal group is available for immediate sale in its present condition.

Management must be committed to the sale, which should be expected to qualify for recognition as a completed sale within one year from the date of classification.

In the consolidated statement of comprehensive income of the reporting period, and of the comparable period of the previous year, income and expenses from discontinued operations are reported separately from income and expenses from continuing operations, down to the level of profit after taxes, even when the Group retains a non-controlling interest in the subsidiary after the sale. The resulting profit or loss (after taxes) is reported separately in the consolidated statement of comprehensive income.

Property, plant and equipment and intangible assets once classified as held for sale are not depreciated or amortized.

Asset retirement obligation (decommissioning)

Provision for decommissioning is recognized in full, on a discounted cash flow basis, when the Group has an obligation to dismantle and remove a facility or an item of plant, property and equipment and to restore the site on which it is located, and when a reasonable estimate of that provision can be made. The amount recognized is the present value of the estimated future expenditure determined in accordance with local conditions and requirements. A corresponding item of property, plant and equipment of an amount equivalent to the provision is also created. This asset is subsequently depreciated as part of the capital costs of the production and transportation facilities based on the appropriate depreciation method.

Changes in the measurement of an existing decommissioning provision that result from changes in the estimated timing or amount of the outflow of resources embodying economic benefits required to settle the obligation, or change in the discount rate, is accounted for so that:

1. Changes in the provision are added to, or deducted from, the cost of the related asset in the current period;
2. The amount deducted from the cost of the asset shall not exceed its carrying amount. If a decrease in the provision exceeds the carrying amount of the asset, the excess is recognized immediately in the consolidated statement of comprehensive income; and
3. If the adjustment results in an addition to the cost of an asset, the Group considers whether this is an indication that the new carrying amount of the asset may not be fully recoverable. If it is such an indication, the Group tests the asset for impairment by estimating its recoverable amount, and accounts for any impairment loss, in accordance with IAS 36.

Financial assets

Initial recognition and measurement

Financial assets are classified, at initial recognition, as subsequently measured at amortized cost, fair value through other comprehensive income, and fair value through profit or loss. The classification of financial assets at initial recognition depends on the financial asset's contractual cash flow characteristics and the Group's business model for managing them. With the exception of trade receivables that do not contain a significant financing component or for which the Group has applied the practical expedient, the Group initially measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs. Trade receivables that do not contain a significant financing component or for which the Group has applied the practical expedient are measured at the transaction price determined under IFRS 15.

In order for a debt financial asset to be classified and measured at amortized cost or fair value through other comprehensive income, it needs to give rise to cash flows that are 'solely payments of principal and interest (SPPI)' on the principal amount outstanding. This assessment is referred to as the SPPI test and is performed at an instrument level. The Group's business model for managing financial assets refers to how it manages its financial assets in order to generate cash flows. The business model determines whether cash flows will result from collecting contractual cash flows, selling the financial assets, or both. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the market place (regular way trades) are recognized on the trade date, i.e., the date that the Group commits to purchase or sell the asset.

Subsequent measurement

For purposes of subsequent measurement, financial assets are classified in two categories:
- Financial assets at amortized cost (debt instruments);
- Financial assets at fair value through profit or loss.

The Group does not have financial assets at fair value through other comprehensive income.

Financial assets at amortized cost (debt instruments)

This category is the most relevant to the Group. The Group measures financial assets at amortized cost if both of the following conditions are met:
- The financial asset is held within a business model with the objective to hold financial assets in order to collect contractual cash flows; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at amortized cost are subsequently measured using the effective interest rate method and are subject to impairment. Gains and losses are recognized in profit or loss when the asset is derecognized, modified or impaired. The Group's financial assets at amortized cost include trade and other receivables, loans due from related parties and bank deposits.

Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss include certain loans due from related parties, which contain embedded derivative financial instruments. Financial assets with cash flows that are not solely payments of principal and interest are classified and measured at fair value through profit or loss, irrespective of the business model. Notwithstanding the criteria for debt instruments to be classified at amortized cost or at fair value through other comprehensive income, as described above, debt instruments may be designated at fair value through profit or loss on initial recognition if doing so eliminates, or significantly reduces, an accounting mismatch.

Financial assets at fair value through profit or loss are carried in the consolidated statement of financial position at fair value with net changes in fair value recognized in the consolidated statement of comprehensive income within the profit and loss.

Derecognition

A financial asset is primarily derecognized (removed from the consolidated statement of financial position) when:

- The rights to receive cash flows from the asset have expired; or
- The Group has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a 'pass-through' arrangement; and either (a) the Group has transferred substantially all the risks and rewards of the asset, or (b) the Group has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

When the Group has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if, and to what extent, it has retained the risks and rewards of ownership. When it has neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the Group continues to recognize the transferred asset to the extent of its continuing involvement. In that case, the Group also recognizes an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Group has retained. Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Group could be required to repay.

Impairment of financial assets

The Group recognizes an allowance for expected credit losses (ECL) for all debt instruments not held at fair value through profit or loss. ECL are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. The expected cash flows will include cash flows from the sale of collateral held or other credit enhancements that are integral to the contractual terms.

ECL are recognized in two stages. For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECL are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (a lifetime ECL).

For trade and other receivables, the Group applies a simplified approach in calculating ECL. Therefore, the Group does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECL at each reporting date. The Group has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors specific to the debtors and the economic environment.

The Group considers a financial asset in default when contractual payments are 90 days past due. However, in certain cases, the Group may also consider a financial asset to be in default when internal or external information indicates that the Group is unlikely to receive the outstanding contractual amounts in full before taking into account any credit enhancements held by the Group. A financial asset is written off when there is no reasonable expectation of recovering the contractual cash flows.

Inventories

Inventories are stated at the lower of cost and net realizable value on a first-in first-out (FIFO) basis. Cost includes all costs incurred in the normal course of business in bringing each product to its present location and condition. The cost of crude oil and refined products is the cost of production, including the appropriate proportion of depreciation, depletion and amortization and overheads based on normal capacity. Net realizable value of crude oil and refined products is based on estimated selling price in the ordinary course of business less any costs expected to be incurred to complete the sale.

Value added tax (VAT)

The tax authorities permit the settlement of VAT on sales and purchases on a net basis. VAT receivable represents VAT on domestic purchases net of VAT on domestic sales. Export sales are zero rated.

Cash and cash equivalents

Cash and cash equivalents include cash in bank and cash on hand, demand deposits with banks with original maturities of three months or less.

Financial liabilities

Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans borrowings and payables, or as derivatives financial instruments.

All financial liabilities are recognized initially at fair value and in the case of loans and borrowings, plus directly attributable transaction costs.

The Group's financial liabilities include trade and other payables, loans and borrowings and derivative financial instruments.

Subsequent measurement

The measurement of financial liabilities depends on their classification as follows:

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss includes financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss.

Financial liabilities are classified as held for trading if they are acquired for the purpose of selling in the near term. This category includes derivative financial instruments entered into by the Group that are not designated as hedging instruments in hedge relationships as defined by IFRS 9. Separated embedded derivatives are also classified as held for trading unless they are designated as effective hedging instruments.

Gains or losses on liabilities held for trading are recognized in profit or loss.

The Group has not designated any financial liabilities upon initial recognition as at fair value through profit or loss.

Trade and other payables

Trade payables are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method.

Loans and borrowings

After initial recognition, interest bearing loans and borrowings are subsequently measured at amortized cost using the effective interest rate method. Gains and losses are recognized in the consolidated statement of comprehensive income when the liabilities are derecognized as well as through the effective interest rate amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fee or costs that are an integral part of the effective interest rate. The effective interest rate amortization is included in finance costs.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized as part of the cost of that asset. Other borrowing costs are recognized as an expense when incurred.

Financial guarantee contracts

Financial guarantee contracts issued by the Group are those contracts that require a payment to be made to reimburse the holder for a loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. Financial guarantee contracts are recognized initially as a liability at fair value, adjusted for transaction costs that are directly attributable to the issuance of the guarantee. Subsequently, the liability is measured at the higher of the expected credit losses allowance calculated under IFRS 9 and the amount recognized less cumulative amortization, if any.

Derecognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognized in profit or loss.

Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount reported in the consolidated statement of financial position if, and only if, there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, or to realize the assets and settle the liabilities simultaneously.

Fair value of financial instruments

The fair value of financial instruments that are traded in active markets at each reporting date is determined by reference to quoted market prices or dealer price quotations (bid price for long positions and ask price for short positions), without any deduction for transaction costs.

For financial instruments not traded in an active market, the fair value is determined using appropriate valuation techniques. Such techniques may include using recent arm's length market transactions; reference to the current fair value of another instrument that is substantially the same; a discounted cash flow analysis or other valuation models.

Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Group expects a provision to be reimbursed, for example under an insurance contract, the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain.

If the effect of the time value of money is material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and, where appropriate, the risks specific to the liability. Where discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost.

Provision for obligations to the Government

The Government assigns various sponsorship and financing obligations to the Group. Management of the Group believes that such Government's assignments represent constructive obligations of the Group and require recognition on the basis of respective resolution of the Government. Furthermore, as the Government is the ultimate controlling party of the Group, the expenditures on these assignments are recognized as other distributions to the Shareholders directly in the equity, in the consolidated financial statements.

Employee benefits

Pension scheme

Payments to defined contribution retirement benefit plans are charged as an expense as they fall due. Payments made to state – managed retirement benefit schemes are dealt with as defined contribution plans where the Group's obligations under the scheme are equivalent to those arising in a defined contribution retirement benefit plan.

Long-term employee benefits

The Group provides long-term employee benefits to employees before, on and after retirement, in accordance with the collective agreements between the Group entities and their employees. The collective agreement provides for certain one-off retirement payments, financial aid for employees' disability, anniversaries, funeral and other benefits. The entitlement to benefits is usually conditional on the employee remaining in service up to retirement age.

The expected costs of the benefits associated with one-off retirement payments are accrued over the period of employment using the same accounting methodology as used for defined benefit post-employment plans with defined payments upon the end of employment. Actuarial gains and losses arising in the year are taken to other comprehensive income. For this purpose, actuarial gains and losses comprise both the effects of changes in actuarial assumptions and experience adjustments arising because of differences between the previous actuarial assumptions and what has actually occurred. Other movements are recognized in the current period, including current service cost, any past service cost and the effect of any curtailments or settlements.

The most significant assumptions used in accounting for defined benefit obligations are discount rate and mortality assumptions. The discount rate is used to determine the net present value of future liabilities and each year the unwinding of the discount on those liabilities is charged to the consolidated statement of comprehensive income as finance costs. The mortality assumption is used to project the future stream of benefit payments, which is then discounted to arrive at a net present value of liabilities.

Employee benefits other than one-off retirement payments are considered as other long-term employee benefits. The expected cost of these benefits is accrued over the period of employment using the same accounting methodology as used for the defined benefit plan. Actuarial gains and losses on other long-term employee benefits are recognized in the profit or loss. These obligations are valued by independent qualified actuaries on an annual basis.

Revenue recognition

Revenues are recognized when (or as) the Group satisfies a performance obligation by transferring a promised good or service (i.e. an asset) to a customer. An asset is transferred when (or as) the customer obtains control of that asset, which usually occurs when the title is passed, provided that the contract price is fixed or determinable and collectability of the receivable is reasonably assured. Specifically, domestic sales of crude oil and gas, as well as petroleum products and materials are usually recognized when title passes. For export sales, title generally passes at the border of the RK. Revenue is measured at the fair value of the consideration received or receivable taking into account the amount of any trade discounts, volume rebates and reimbursable taxes.

Sales of support services are recognized as services are performed provided that the service price can be determined and no significant uncertainties regarding the receipt of revenues exist.

Interest income and expense

For all financial instruments measured at amortized cost, and interest income and interest expense are recorded using the effective interest rate. Effective interest rate is the rate that exactly discounts the estimated future cash payments or receipts over the expected life of the financial instrument or a shorter period, where appropriate, to the net carrying amount of the financial asset or liability. Interest income is included in finance income and interest expense is included in finance costs in the consolidated statement of comprehensive income.

Trade receivables

A receivable represents the Group’s right to an amount of consideration that is unconditional (i.e., only the passage of time is required before payment of the consideration is due).

Contract liabilities

A contract liability is the obligation to transfer goods or services to a customer for which the Group has received consideration (or an amount of consideration is due) from the customer. If a customer pays consideration before the Group transfers goods or services to the customer, a contract liability is recognized when the payment is made or the payment is due (whichever is earlier). Contract liabilities are recognized as revenue when the Group performs under the contract.

Expense recognition

Expenses are recognized as incurred and are reported in the consolidated financial statements in the period to which they relate on an accrual basis.

Income taxes

Income tax for the year comprises current income tax, excess profit tax and deferred tax. Current income tax assets and liabilities for the current and prior periods are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted by the reporting date. Current income tax (CIT) relating to items recognized directly in equity is recognized in equity and not in the consolidated statement of comprehensive income.

Excess profit tax (EPT) is treated as an income tax and forms part of income tax expense. In accordance with the applicable tax legislation, the Group accrues and pays EPT in respect of each subsoil use contract, at varying rates based on the ratio of aggregate annual income to deductions for the year for a particular subsoil use contract. The ratio of aggregate annual income to deductions in each tax year triggering the application of EPT is 1.25:1. EPT rates are applied to the part of the taxable income (taxable income after corporate income tax and allowable adjustments) related to each subsoil use contract in excess of 25% of the deductions attributable to each contract.

Deferred tax is calculated with respect to both CIT and EPT. Deferred EPT is calculated on temporary differences for assets allocated to subsoil use contracts at the expected rate of EPT to be paid under the contract.

Deferred income tax is provided using the liability method on temporary differences at the reporting date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes.

Deferred income tax liabilities are recognized for all taxable temporary differences, except:
- Where the deferred income tax liability arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; and
- In respect of taxable temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, where the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred income tax assets are recognized for all deductible temporary differences, carryforward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carryforward of unused tax credits and unused tax losses can be utilized except:
- When the deferred income tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss; and
- In respect of deductible temporary differences associated with investments in subsidiaries, associates and interests in joint ventures, deferred income tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

The carrying amount of deferred income tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred income tax asset to be utilized. Unrecognized deferred income tax assets are reassessed at each reporting date and are recognized to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered. Deferred income tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the reporting date.

Deferred income tax relating to items recognized directly in equity is recognized in equity and not in the consolidated statement of comprehensive income. Deferred income tax assets and deferred income tax liabilities are offset, if a legally enforceable right exists to set off current tax assets against current income tax liabilities and the deferred income taxes relate to the same taxable entity and the same taxation authority. Deferred tax assets are recognized for all allowances and unused tax losses to the extent that it is probable that taxable temporary differences and business nature of such expenses will be proved. Significant management judgment is required to determine the amount of deferred tax assets that can be recognized, based upon the likely timing and level of future taxable profits together with future tax planning strategies.

Equity

Non-controlling interest

Non-controlling interests are presented in the consolidated statement of financial position within equity, separately from the equity of the Company's owners. Total comprehensive income is attributed to the Company's owners and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Dividends

Dividends are recognized as a liability and deducted from equity at the reporting date only if they are declared before or on the reporting date. Dividends are disclosed when they are declared before the reporting date or after the reporting date but before the consolidated financial statements are authorized for issue.

Distributions to the Shareholders

Expenditures incurred by the Group based on the respective resolution of the Government based on the RK President's charge or decision and instructions of Samruk-Kazyna are accounted for as other distributions through equity. Such expenditures include costs associated with non-core activity of the Group (construction of social assets to be transferred to Samruk-Kazyna).

Subsequent events

The results of post-year-end events that provide evidence of conditions that existed at the reporting date (adjusting events) are reflected in the consolidated financial statements. Post-year-end events that are not adjusting events are disclosed in the notes to the consolidated financial statements when material.

4. SIGNIFICANT ACCOUNTING ESTIMATES AND JUDGEMENTS

The preparation of the Group's consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets and liabilities and the disclosure of contingent liabilities and assets, at the reporting date. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of the asset or liability affected in future periods.

Considerations in respect of COVID-19 pandemic and hydrocarbon economy in 2021

The impact of COVID-19 and unfavorable trend in the global hydrocarbons market on the basis of preparation of these consolidated financial statements has been considered as part of the going concern assessment. To support this assertion liquidity forecast has been assessed under several stressed scenarios.

In "Exploration and production of oil and gas segment" no impairment indicators of property, plant and equipment intangible assets and exploration and evaluation assets were observed.

In "Oil transportation" segment impairment charges of 4,453 million tenge were recognized. Impairment charges mainly relate to barges of KazMorTransFlot LLP (Note 13). The recoverable amounts of the CGUs within these businesses were based on value-in-use calculations.

In "Refining and trading of crude oil and refined products segment" impairment charges of 8,298 million tenge were recognized, which represent partial impairment of refining assets of KMG International N.V. (further KMGI) (Note 13). The recoverable amount of these assets for impairment testing purposes was determined based on fair value less cost to disposal.

Headroom of the majority of oil and refining assets are sensitive to changes in price or other assumptions. The changes within next financial periods may result in recoverable amount of these assets above or below the current carrying amounts and therefore there is a risk of impairment reversals or charges in those periods. Sensitivity to key assumptions for significant CGUs of the Group, at which impairment charges were recognized in 2021, were disclosed in Note 13.

Impairment testing assumptions

The Group's long-term assumptions for Brent oil prices, KZT/USD exchange rate and inflation projections have been revised and are based on externally sourced forecasts and rates of the independent research organizations considering long-tern market expectations. Production volumes estimates are based on proved developed and undeveloped reserves for subsidiaries, and on proved and probable reserves for significant investments in joint ventures and associates. Production period is either based on subsoil use contracts' expiration date or on extended license period, to which the Group has strong intention to extend its licenses. Estimated production volumes are based on the Group's production plans that are mostly used for the purposes of application filing for extension of subsoil use contracts.

Discount rates were estimated on the weighted average cost of capital of the individual cash generating unit and ranged between 10.70-16.30% depending on the functional currency, production period, size, equity risk premium, beta and gearing ratio of the relevant CGU.

The long-term price assumptions applied were derived from Bloomberg consensus; so did the near-term commodity price assumptions, a summary of which, in real 2021 terms, is provided below:

	2022	2023	2024	2025	2026
Brent oil ($/bbl)	73	71.5	73	70	71

Oil and gas reserves

Oil and gas reserves are a material factor in the Group's computation of depreciation, depletion and amortization expenses. The Group estimates its oil and gas reserves in accordance with the methodology of the Society of Petroleum Engineers (SPE). In estimating its reserves under SPE methodology, the Group uses long-term planning prices. Using planning prices for estimating proved reserves removes the impact of the volatility inherent in using year-end spot prices. Management believes that long-term planning price assumptions, which are also used by management for their business planning and investment decisions are more consistent with the long-term nature of the upstream business and provide the most appropriate basis for estimating oil and gas reserves.

All reserve estimates involve some degree of uncertainty. The uncertainty depends mainly on the amount of reliable geological and engineering data available at the time of the estimate and the interpretation of this data.

The relative degree of uncertainty can be conveyed by placing reserves into one of two principal classifications, either proved or unproved. Proved reserves are more certain to be recovered than unproved reserves and may be further sub-classified as developed and undeveloped to denote progressively increasing uncertainty in their recoverability.

Estimates are reviewed and revised annually. Revisions occur due to the evaluation or re-evaluation of already available geological, reservoir or production data, availability of new data, or changes to underlying price assumptions. Reserve estimates may also be revised due to improved recovery projects, changes in production capacity or changes in development strategy. Proved developed reserves are used to calculate the unit of production rates for depreciation, depletion and amortization in relation to oil and gas production assets. The Group has included in proved reserves only those quantities that are expected to be produced during the initial subsoil use contract period. This is due to the uncertainties surrounding the outcome of such renewal procedures, since the renewal is ultimately at the discretion of the Government. An increase in the Group's subsoil use contract periods and corresponding increase in reported reserves would generally lead to lower depreciation, depletion and amortization expense and could materially affect earnings. A reduction in proved developed reserves will increase depreciation, depletion and amortization expense (assuming constant production), reduce income and could also result in an immediate write-down of the property's book value. Given the relatively small number of producing fields, it is possible that any changes in reserve estimates year on year could significantly affect prospective charges for depreciation, depletion and amortization.

Please refer Note 13 for details on annual impairment test results.

Recoverability of oil and gas assets, downstream, refining and other assets

The Group assesses assets or CGU for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Where an indicator of impairment exists, a formal estimate of the recoverable amount is made, which is considered to be the higher of the fair value less costs to sell and value in use. These assessments require the use of estimates and assumptions such as long-term oil prices, discount rates, future capital requirements, operating performance (including production and sales volumes) that are subject to risk and uncertainty. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset/CGU is considered to be impaired and is written down to its recoverable amount. In assessing recoverable values, the estimated future cash flows are adjusted for the risks specific to the asset group and are discounted to their present value using a discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. Fair value less costs to sell is identified as the price that would be received to sell the asset in an orderly transaction between market participants and does not reflect the effects of factors that may be specific to the entity and not applicable to entities in general.

KMGI CGU, including goodwill

As at December 31, 2021 and 2020, the Group performed its annual impairment tests for goodwill and downstream, refining and other assets due to existence of impairment indicators at the CGUs of KMGI. As the result of the impairment analysis, recoverable amount of KMGI CGUs exceeded their carrying values (Note 13).

Pavlodar refinery, goodwill

As of December 31, 2021 and 2020 the Group has goodwill of 88,553 million tenge related to acquisition of Pavlodar oil chemistry refinery LLP (further Pavlodar refinery) (Note 17). The Group performed annual impairment test for the Pavlodar refinery goodwill using the current tolling business scheme employed by Pavlodar refinery in December 2021 and 2020. The Group considered the forecast for oil tolling volumes, oil tolling tariffs, capital expenditures, among other factors, when reviewing for indicators of impairment. The recoverable amount is calculated using a discounted cash flow model. In 2021, the discount rate of 12.06% was calculated based on the pre-tax weighted average cost of capital. The inherent risk was included by applying an individual beta factor. The beta factor was estimated based on the publicly available market data. Forecasted cash flows till to 2029 were based on five-years business plan of Pavlodar refinery 2022-2026, which assumes current management estimates on potential changes in operating and capital costs. As at December 31, 2021 and 2020 the recoverable amount of goodwill, which was determined based on value-in-use, exceeded its book value, as such no impairment of Pavlodar refinery goodwill was recognized.

Sensitivity to changes in assumptions

Results of the assessment of recoverable amount of Pavlodar refinery goodwill are sensitive to changes in key assumptions, in particular, assumptions related to changes in discount rate and target EBITDA in terminal period. Increase in discount rates by 1.0% to 13.06% and decrease of target EBITDA in terminal period by 1% would not result decrease of the recoverable amount of CGU Pavlodar refinery to its carrying value.

Other CGUs

Revision to the Group's commodity price and other assumptions have not resulted in impairment charges in any other CGUs of the Refining and trading of crude oil and refined products segment.

Assets retirement obligations

Oil and gas production facilities

Under the terms of certain subsoil use contracts, legislation and regulations the Group has legal obligations to dismantle and remove tangible assets and restore the land at each production site. Specifically, the Group's obligation relates to the ongoing closure of all non-producing wells and final closure activities such as removal of pipes, buildings and recultivation of the contract territories, and also obligations to dismantle and remove tangible assets and restore territory at each production site. Since the subsoil use contract terms cannot be extended at the discretion of the Group, the settlement date of the final closure obligations has been assumed to be the end of each subsoil use contract period. The extent of the Group's obligations to finance the abandonment of wells and for final closure costs depends on the terms of the respective subsoil use contracts and current legislation.

Where neither subsoil use contracts nor legislation include an unambiguous obligation to undertake or finance such final abandonment and closure costs at the end of the subsoil use contract term, no liability has been recognized. There is some uncertainty and significant judgment involved in making such a determination. Management's assessment of the presence or absence of such obligations could change with shifts in policies and practices of the Government or in the local industry practice.

The Group calculates asset retirement obligations separately for each contract. The amount of the obligation is the present value of the estimated expenditures expected to be required to settle the obligation adjusted for expected inflation and discounted using average long-term risk-free interest rates for emerging market sovereign debt adjusted for risks specific to the Kazakhstan market.

At each reporting date the Group reviews site restoration provisions, and adjusts them to reflect the current best estimate in accordance with IFRIC 1 Changes in Existing Decommissioning, Restoration and Similar Liabilities.

Estimating the future closure costs involves significant estimates and judgments by management. Most of these obligations are many years in the future and, in addition to ambiguities in the legal requirements, the Group's estimate can be affected by changes in asset removal technologies, costs and industry practice. The Group estimates future well abandonment cost using current year prices and the average long-term inflation rate.

The long-term inflation and discount rates used to determine the obligation in the consolidated statement of financial position across the Group entities at December 31, 2021 were in the range from 2.23% to 8.10% and from 3.80% to 10.25%, respectively (December 31, 2020: from 2.00% to 7.3% and from 3.68% to 11.00%, respectively). As at December 31, 2021 the carrying amounts of the Group's asset retirement obligations relating to decommissioning of oil and gas facilities were 67,190 million tenge (December 31, 2020: 66,177 million tenge) (Note 26).

Major oil and gas pipelines

According to the Law of the RK On Major Pipelines which was made effective on July 4, 2012 KazTransOil JSC (further KTO) has legal obligation to decommission its major oil pipelines at the end of their operating life and to restore the land to its original condition. Asset retirement obligation is calculated based on estimate of the work to decommission and rehabilitate. As at December 31, 2021, the carrying values of the Group's asset retirement obligations relating to decommissioning of pipelines and land were 34,547 million tenge (December 31, 2020: 113,558 million tenge) (Note 26).

Environmental remediation obligations provision

The Group also makes judgments and estimates in establishing provisions for environmental remediation obligations. Environmental expenditures are capitalized or expensed depending upon their future economic benefit. Expenditures that relate to an existing condition caused by past operations and do not have a future economic benefit are expensed.

Liabilities are determined based on current information about costs and expected plans for remediation and are recorded on discounted basis. The Group's environmental remediation provision represents management best estimate based on an independent assessment of the anticipated expenditure necessary for the Group to remain in compliance with the current regulatory regime in Kazakhstan and Europe. The Group has classified this obligation as non-current except for the portion of costs, included in the annual budget for 2022. For environmental remediation provisions, actual costs can differ from estimates because of changes in laws and regulations, public expectations, discovery and analysis of site conditions and changes in clean-up technology. Movements in the provision for environmental remediation obligations are disclosed in Note 26.

Employee benefits

The cost of defined long-term employee benefits payable before, on and after retirement and the present value of the obligation are determined using actuarial valuations. An actuarial valuation involves making various assumptions that may differ from actual developments in the future. These include the determination of the discount rate, future salary increases, mortality rates and future pension increases.

Due to the complexity of the valuation, the underlying assumptions and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions. All assumptions are reviewed at each reporting date.

Taxation

In assessing tax risks, management considers to be probable obligations the known areas of tax positions which the Group would not appeal or does not believe it could successfully appeal, if assessed by tax authorities. Such determinations inherently involve significant judgment and are subject to change as a result of changes in tax laws and regulations, amendments to the taxation terms of the Group's subsoil use contracts, the determination of expected outcomes from pending tax proceedings and current outcome of ongoing compliance audits by tax authorities. The provision for tax risks other than on income tax are disclosed under provisions for taxes in Note 26. Contingent liabilities for tax risks other than on income tax are disclosed in Note 32. Provisions and contingent liabilities related to income tax are included or disclosed as income tax liabilities or contingencies (see Note 29 and 32 for further details).

Useful lives of property, plant and equipment

The Group assesses the remaining useful lives of items of property, plant and equipment at least at each financial year-end and, if expectations differ from previous estimates, the changes are accounted for prospectively as a change in an accounting estimate in accordance with IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors.

Fair value of financial instruments

Where the fair value of financial assets and financial liabilities recorded in the consolidated statement of financial position cannot be derived from active markets, they are determined using valuation techniques including the discounted cash flows model. The inputs to these models are taken from observable markets where possible, but where this is not feasible, a degree of judgment is required in establishing fair values. The judgments include considerations of inputs such as liquidity risk, credit risk and volatility. Changes in assumptions about these factors could affect the reported fair value of financial instruments presented in the consolidated financial statements. Further details are disclosed in Note 31.

5. LOSS OF CONTROL

On March 11, 2021, the Company and Samruk-Kazyna entered into a trust management agreement with respect to 100% common shares of KazTransGas JSC (further KTG). On November 9, 2021, the Company transferred to Samruk-Kazyna 100% shares of KTG for 1 tenge and the trust management agreement was terminated.

The transaction was preceded by fulfilment of a number of legal and financial conditions, including approvals from KMG lenders and relevant government agencies. The last condition was fulfilled on November 8, 2021. Starting from November 8, 2021, KTG was classified as a discontinued operation.

The Company's obligation on the financial guarantee of the Company and KTG under syndicated loan of Beineu-Shymkent Gas Pipeline LLP, the joint venture of KTG, was transferred to KTG (Note 27).

The business of KTG represented the entirety of the Group's Gas trading and transportation segment until November 8, 2021. With KTG being disposed, the Gas trading and transportation segment is no longer presented in the segment note.

The consolidated statement of comprehensive income and the consolidated statement of cashflows, as well as the related notes to the consolidated financial statements for prior year were restated retrospectively.

The results of KTG for the period ended November 8, 2021 and the year ended December 31, 2020 are presented below:

In millions of tenge	For the period ended November 8, 2021	For the year ended December 31, 2020
Revenue	**708,110**	931,073
Share in profit of joint ventures, net	**275,100**	230,380
Finance income	**19,750**	21,766
Other operating income	**18,288**	6,075
Total revenue and other income from discontinued operations	**1,021,248**	**1,189,294**
Cost of purchased gas and other materials	**(158,438)**	(375,831)
Production expenses	**(66,266)**	(84,608)
Taxes other than income tax	**(12,645)**	(15,237)
Depreciation, depletion and amortization	**(63,502)**	(42,856)
Transportation and selling expenses	**(248,832)**	(321,042)
General and administrative expenses	**(18,420)**	(23,583)
Finance costs	**(36,330)**	(32,179)
Net foreign exchange loss	**(4,423)**	(7,747)
Other expenses	**(4,399)**	(3,856)
Profit before income tax from discontinued operations	**407,993**	**282,355**
Income tax expenses	**(55,515)**	(21,027)
Profit after income tax for the period from discontinued operations	**352,478**	**261,328**

The net cash flows incurred by KTG period ended November 8, 2021 and the year ended December 31, 2020 are as follows:

In millions of tenge	For the period ended November 8, 2021	For the year ended December 31, 2020
Operating	**184,675**	88,737
Investing	**(8,689)**	71,562
Financing	**(44,270)**	(36,183)
Net increase in cash and cash equivalents	**134,138**	**132,134**

At the date of loss of control net assets of KTG were as follows

In millions of tenge	Net assets at the date of loss of control
Assets	
Property, plant and equipment	968,467
Investments in joint ventures	662,208
Loans due from related parties	176,019
VAT receivable	94,439
Inventories	41,834
Trade accounts receivable	127,567
Other non-current assets	95,088
Other current assets	77,582
Cash and cash equivalents	380,438
Assets classified as held for sale	**2,623,642**
Liabilities	
Borrowings	490,813
Provisions	119,902
Deferred income tax liabilities	72,909
Trade accounts payable	132,708
Other non-current liabilities	25,157
Other current liabilities	32,694
Liabilities directly associated with assets classified as held for sale	**874,183**
Net assets directly associated with disposal group	**1,749,459**

Other non-current liabilities of KTG as of the date of loss of control were adjusted for the Company's obligation on the financial guarantee for 6,445 million tenge.

Since the transfer of KTG was carried out pursuant to the order of the President of the RK and the decision of the Samruk-Kazyna, the difference between the sale price and the carrying amount of net assets of KTG at the date of loss of control was recorded as transactions with Samruk-Kazyna.

6. REVENUE

In millions of tenge	2021	2020 (restated)
Type of goods and services		
Sales of crude oil and gas	**3,097,249**	1,676,749
Sales of refined products	**2,102,113**	1,336,723
Refining of oil and oil products	**203,425**	193,659
Oil and gas transportation services	**171,365**	167,911
Other revenue	**264,641**	249,922
	5,838,793	3,624,964
Geographical markets		
Kazakhstan	**978,343**	770,102
Other countries	**4,860,450**	2,854,862
	5,838,793	3,624,964

7. SHARE IN PROFIT OF JOINT VENTURES AND ASSOCIATES, NET

In millions of tenge	2021	2020 (restated)
Tengizchevroil LLP	**441,665**	173,476
Caspian Pipeline Consortium	**90,904**	81,582
KMG Kashagan B.V.	**88,423**	(6,961)
Mangistau Investments B.V.	**80,154**	16,749
KazRosGas LLP	**20,952**	957
Kazakhstan-China Pipeline LLP	**13,464**	10,380
Kazakhoil-Aktobe LLP	**13,379**	2,448
Valsera Holdings B.V.	**11,868**	(6,137)
PetroKazakhstan Inc.	**8,042**	(8,812)
KazGerMunay LLP	**6,108**	15,622
Teniz Service LLP	**(3,089)**	3,891
Ural Group Limited	**(11,060)**	(10,265)
Other joint ventures and associates	**7,923**	7,885
	768,733	280,815

8. COST OF PURCHASED OIL, GAS, PETROLEUM PRODUCTS AND OTHER MATERIALS

In millions of tenge	2021	2020 (restated)
Purchased oil for resale	**2,626,857**	1,311,169
Cost of oil for refining	**558,603**	313,543
Materials and supplies	**256,761**	214,332
Purchased petroleum products for resale	**97,964**	45,870
Purchased gas for resale	**56,306**	16,322
	3,596,491	1,901,236

9. PRODUCTION EXPENSES

In millions of tenge	2021	2020 (restated)
Payroll	**310,672**	294,529
Repair and maintenance	**116,151**	103,124
Energy	**98,258**	81,910
Transportation costs	**45,599**	39,631
Short-term lease expenses	**28,213**	33,822
Others	**94,138**	103,162
	693,031	656,178

10. TAXES OTHER THAN INCOME TAX

In millions of tenge	2021	2020 (restated)
Rent tax on crude oil export	**129,056**	41,120
Export customs duty	**107,074**	71,746
Mineral extraction tax	**91,751**	59,323
Other taxes	**100,758**	82,133
	428,639	254,322

11. TRANSPORTATION AND SELLING EXPENSES

In millions of tenge	2021	2020 (restated)
Transportation	**87,282**	94,800
Payroll	**11,899**	12,811
Other	**32,731**	29,533
	131,912	137,144

12. GENERAL AND ADMINISTRATIVE EXPENSES

In millions of tenge	2021	2020 (restated)
Payroll	**63,844**	63,360
Management fees	**21,428**	–
Consulting services	**15,912**	21,893
Maintenance	**5,620**	6,163
Social payments	**4,594**	5,028
Communication	**4,081**	3,624
Accrual of expected credit losses for trade receivables and other current financial assets (Note 21)	**3,268**	3,460
VAT that could not be offset	**2,599**	3,166
Allowance for fines, penalties and tax provisions	**2,114**	12
Accrual/(reversal) of impairment of other current non-financial assets (Note 21)	**101**	(65)
(Reversal)/accrual of impairment of VAT receivable	**(5,144)**	6,432
Other	**30,061**	33,552
	148,478	146,625

For the year ended December 31, 2021, the total payroll amounted to 386,415 million tenge (2020: 370,700 million tenge) and was included in production expenses, transportation and selling expenses and general and administrative expenses in the consolidated statement of comprehensive income.

13. IMPAIRMENT OF PROPERTY, PLANT AND EQUIPMENT, EXPLORATION AND EVALUATION ASSETS, INTANGIBLE ASSETS, ASSETS CLASSIFIED AS HELD FOR SALE AND EXPLORATION EXPENSES

In millions of tenge	2021	2020 (restated)
Impairment charge and reversal		
Property, plant and equipment (Note 15)	17,013	221,112
Assets classified as held for sale	3,770	–
Exploration and evaluation assets (Note 16)	–	16,389
Investment property	–	142
Intangible assets (Note 17)	(59)	6,250
	20,724	243,893
Exploration expenses		
Zhambyl project	**59,283**	–
Brownfields of KMG EP	**19,800**	19,692
Samtyr, Zhayik, Saraishyk, Zaburunie projects	**–**	115
	79,083	19,807
	99,807	263,700

Impairment was recognized for the following CGUs:

In millions of tenge	2021	2020 (restated)
CGUs of KMGI	**8,298**	162,455
Sunkar, Barys and Berkut, self-propelled barges (Barges)	**4,453**	10,297
EMG CGU	**–**	60,440
Others	**7,973**	10,701
	20,724	243,893

CGUs of KMGI

In 2020, KMGI, the Group subsidiary, performed impairment tests of its CGUs. As a result of the test performed, KMGI recognized impairment loss of property, plant and equipment and intangible assets of 155,544 million tenge and 6,911 million tenge, respectively.

On July 2, 2021, an incident occurred at the Petromidia Refinery (further Petromidia), subsidiary of KMGI, that led to fire and resulted in temporarily interruption of the production until damaged facilities are repaired. KMGI conducted assessments to estimate the incident consequences and recognized impairmentof property, plant and equipment of Petromidia for 1,615 million tenge.

For the year ended December 31, 2021, based on the results of the property, plant and equipment physical inspection, KMGI recognized an impairment loss of property, plant and equipment for 6,683 million tenge.

EMG CGU

In 2020, Embamunaigas (further EMG), subsidiary of KazMunayGas Exploration Production JSC (further KMG EP), carried out an assessment of the recoverable amount of property, plant and equipment and exploration and evaluation assets due to the presence of impairment indicators such as decline in the forecasted oil prices. The result of this assessment indicated that the carrying value of assets exceeded their estimated recoverable amount by 60,440 million tenge, particularly, 44,098 million tenge of property, plant and equipment and 16,342 million tenge of exploration and evaluation assets were impaired.

For the year ended December 31, 2021, no impairment or reversal of impairment indicators for property, plant and equipment, intangible assets and exploration and evaluation assets were observed.

Barges

The recoverable amount of the barges of KazMorTransFlot LLP was determined on the basis of value-in-use method. Value-in-use was assessed as the present value of the future cash flows expected to be derived from the barges until the end of the existing and probable contracts at the discount rate of 10.7% (2020: 11.3%). As a result of the test, the Group recognized an impairment loss of 4,453 million tenge for the year ended December 31, 2021 in regards of Barys and Berkut barges (2020: 10,297 million tenge on Sunkar, Barys and Berkut barges).

Exploration expenses

For the year ended December 31, 2020 the Group has written off the exploration and evaluation assets in the amount of 12,829 million tenge as a result of termination of Ozen-Karamandybas exploration subsoil use contract, the contract territory of which was relinquished to the Government. Also, the Group partially reduced the contract area at Karaton-Sarkamys site and, accordingly, wrote off exploration and evaluation expenses in the amount of 6,863 million tenge.

For the year ended December 31, 2021 the Group has written off the exploration and evaluation assets in the amount of 59,283 million tenge of Zhambyl project, the subsoil use contract for which was terminated and the contract territory was relinquished to the Government. Also, the Group partially reduced the contract area at Taisoigan site and, accordingly, wrote off exploration and evaluation expenses in the amount of 19,800 million tenge.

14. FINANCE INCOME / FINANCE COST

Finance income

In millions of tenge	2021	2020 (restated)
Interest income on bank deposits, financial assets, loans and bonds	**64,655**	70,800
Amortization of issued financial guarantees	**1,704**	2,276
Total interest income	**66,359**	**73,076**
Revaluation of financial assets at fair value through profit or loss	**12,022**	445
Discount on a loan with non-market interest rate (Note 25)	**–**	11.002
Other	**6,218**	3,464
	84,599	87,987

Finance costs

In millions of tenge	2021	2020 (restated)
Interest expense on loans and bonds	**218,999**	215,614
Interest expense on lease liabilities	**2,950**	3,390
Total interest expense	**221,949**	**219,004**
Unwinding of discount on asset retirement obligations, for environmental obligation and other provisions (Note 26)	**9,206**	7,284
Unwinding of discount on employee benefits obligations (Note 26)	**4,412**	3,484
Bonds redemption fee (Note 25)	**–**	21,057
Other	**13,698**	14,543
	249,265	265,372

15. PROPERTY, PLANT AND EQUIPMENT

In millions of tenge	Oil and gas assets	Pipelines	Refinery assets	Buildings and improvements	Machinery and equipment	Vehicles	Other	Capital work in progress	Total
Net book value as at December 31, 2019	**1,049,763**	**803,717**	**1,381,661**	**300,655**	**457,811**	**97,637**	**106,286**	**286,741**	**4,484,271**
Foreign currency translation	50,582	3,992	39,281	6,928	3,404	2,973	7,033	15,034	129,227
Change in estimate	6,785	5,914	–	28	–	–	–	–	12,727
Additions	4,738	1,967	2,176	4,455	6,901	5,439	2,561	404,519	432,756
Disposals	(17,138)	(18,212)	(10,829)	(4,412)	(4,135)	(1,887)	(2,783)	(2,533)	(61,929)
Depreciation charge	(109,846)	(29,297)	(119,746)	(19,746)	(37,922)	(11,085)	(11,163)	–	(338,805)
Accumulated depreciation and impairment on disposals	13,876	1,893	10,364	3,352	4,007	1,720	2,521	1,356	39,089
Impairment (Note 13)	(37,887)	(731)	(155,544)	(5,101)	(1,366)	(11,766)	(1,750)	(6,768)	(220,913)
Transfers to assets classified as held for sale	–	–	(834)	(14,777)	(71,856)	(86)	(228)	(1,400)	(89,181)
Transfers from/(to) inventory, net	42	(28)	1,619	–	264	(54)	532	2,541	4,916
Transfers from exploration and evaluation assets (Note 16)	67	–	–	–	–	–	–	–	67
Transfers to investment property	–	–	–	(19,207)	–	–	–	–	(19,207)
Other changes	–	–	(96)	–	–	–	(619)	(2,558)	(3,273)
Transfers	122,633	39,542	23,058	37,527	96,713	1,770	9,557	(330,800)	–
Net book value as at December 31, 2020	**1,083,615**	**808,757**	**1,171,110**	**289,702**	**453,821**	**84,661**	**111,947**	**366,132**	**4,369,745**
At cost	2,232,770	1,063,532	2,537,233	591,757	880,230	235,520	244,801	422,492	8,208,335
Accumulated depreciation and impairment	(1,149,155)	(254,775)	(1,366,123)	(302,055)	(426,409)	(150,859)	(132,854)	(56,360)	(3,838,590)
Net book value as at December 31, 2020	**1,083,615**	**808,757**	**1,171,110**	**289,702**	**453,821**	**84,661**	**111,947**	**366,132**	**4,369,745**

In millions of tenge	Oil and gas assets	Pipelines	Refinery assets	Buildings and improve-ments	Machinery and equipment	Vehicles	Other	Capital work in progress	Total
Foreign currency translation	13,298	1,075	7,241	908	1,288	894	1,818	4,720	31,242
Change in estimate	259	(382)	–	(3)	–	–	–	–	(126)
Additions	11,165	3,163	2,063	6,716	42,099	6,857	3,452	324,834	400,349
Disposals	(27,370)	(9,103)	(39,685)	(5,401)	(7,141)	(5,033)	(4,919)	(685)	(99,337)
Loss of control over subsidiaries	–	–	–	(631)	(557)	(248)	(222)	(38)	(1,696)
Depreciation charge	(115,545)	(27,370)	(114,521)	(19,786)	(36,632)	(9,925)	(11,034)	–	(334,813
Accumulated depreciation and impairment on disposals	23,602	8,586	11,649	4,525	5,935	4,102	4,701	373	63,473
(Impairment)/ reversal of impairment (Note 13)	(3,939)	(3)	(8,276)	2	13	(4,451)	22	(381)	(17,013)
Discontinued operations (Note 5)	(32,655)	(549,852)		(73,865)	(261,707)	(4,196)	(4,547)	(41,645)	(968,467)
Transfers to assets classified as held for sale	–	–	(24)	(11,452)	(33,477)	(48)	(450)	–	(45,451)
Transfers from inventory, net	46	1,387	125	1	82	1	1,424	1,863	4,929
Transfers from exploration and evaluation assets (Note 16)	16,674	–	–	–	–	–	–	–	16,674
Transfers from investment property	–	–	–	2,296	–	–	7	–	2,303
Other changes	(6,179)	–	–	–	–	–	(16)	(9,637)	(15,832)
Transfers	163,579	26,459	91,738	18,811	75,467	2,611	6,833	(385,498)	–
Net book value as at December 31, 2021	**1,126,550**	**262,717**	**1,121,420**	**211,823**	**239,191**	**75,225**	**109,016**	**260,038**	**3,405,980**
At cost	2,370,020	394,496	2,624,793	507,485	588,037	214,572	243,514	309,288	7,252,205
Accumulated depreciation and impairment	(1,243,470)	(131,779)	(1,503,373)	(295,662)	(348,846)	(139,347)	(134,498)	(49,250)	(3,846,225)
Net book value as at December 31, 2021	**1,126,550**	**262,717**	**1,121,420**	**211,823**	**239,191**	**75,225**	**109,016**	**260,038**	**3,405,980**

Additions

In 2021, additions were mainly attributable to development drilling at Ozenmunaigas JSC (further OMG), subsidiary of KMG EP, EMG and KMG Karachaganak LLP for the total of 145,179 million tenge, overhaul of main gas pipelines and construction of gas metering stations and rotational camp at KTG for total amount of 41,642 million tenge within the framework of the projects “Bukhara gas-bearing region Tashkent-Bishkek-Almaty“, “Gazli-Shymkent” and “Bukhara-Ural”; construction of water pipeline of “Kulsary-Tengiz” for 24,987 million tenge at KTO; and overhauls at Atyrau refinery LLP (further Atyrau refinery) and Rompetrol Rafinare for 22,522 million tenge and 29,693 million tenge respectively.

In 2020, additions to capital work in progress were mainly attributable to development drilling at OMG, EMG and KMG Karachaganak LLP for the total of 148,593 million tenge, construction of compressor stations at KTG for 113,844 million tenge within the framework of the projects “Beineu-Bozoy-Shymkent and Bukhara-Ural” and reconstruction of “Bozoi” underground gas storage, replacement of “Prorva-Kulsary” and “Uzen-Atyray-Samara” pipeline for 43,247 million tenge at KTO, and overhauls at the plant facilities at Rompetrol Rafinare for 51,617 million tenge.

Transfer to assets held for sale

During 2021, the Group reclassified to assets held for sale property and equipment of 45,451 million tenge mainly represented by compressor station “Aral” for 40,378 million tenge and property, plant and equipment of UTTiOS LLP for 5,009 million tenge.

During 2021, the Group sold the compressor station “Korkyt-ata”, which was reclassified to assets held for sale in 2020, for the consideration of 42,886 million tenge.

During 2020, the Group reclassified to assets held for sale compressor stations “Turkestan” and sold it for the consideration of 43,667 million tenge.

Other

For the year ended December 31, 2021, the Group capitalized to the carrying amount of property, plant and equipment borrowing costs related to construction of 32 million tenge at the average interest rate of 2.10% (for the year ended December 31, 2020: 2,890 million tenge at the average interest rate of 5.78%) (Note 25).

As at December 31, 2021, the cost of fully depreciated but still in use property, plant and equipment was 329,282 million tenge (as at December 31, 2020: 340,511 million tenge).

As at December 31, 2021, property, plant and equipment with the net book value of 837,744 million tenge (as at December 31, 2020: 910,216 million tenge) were mainly pledged as collateral to secure borrowings of the Group.

Capital commitments are disclosed in Note 32.

16. EXPLORATION AND EVALUATION ASSETS

In millions of tenge	Tangible	Intangible	Total
Net book value as at December 31, 2019	**152,292**	**27,605**	**179,897**
Additions	14,212	787	14,999
Write-off (Note 13)	(19,235)	(572)	(19,807)
Impairment (Note 13)	(12,797)	(3,592)	(16,389)
Trial production	(248)	–	(248)
Transfer to property, plant and equipment (Note 15)	(67)	–	(67)
Net book value as at December 31, 2020	**134,157**	**24,228**	**158,385**
Additions	8,763	831	9,594
Change in estimate	77	–	77
Write-off (Note 13)	(76,869)	(2,214)	(79,083)
Discontinued operations (Note 5)	(19,250)	(14)	(19,264)
Loss of control over subsidiaries	–	(427)	(427)
Transfers to intangible assets (Note 17)	–	(8,768)	(8,768)
Transfer to property, plant and equipment (Note 15)	(16,674)	–	(16,674)
Other changes	(299)	–	(299)
Net book value as at December 31, 2021	**29,905**	**13,636**	**43,541**

As at December 31, 2021 and 2020 the exploration and evaluation assets are represented by the following projects:

In millions of tenge	December 31, 2021	December 31, 2020
EMG	**16,357**	33,458
Urikhtau	**13,726**	38,834
KTG projects	**–**	17,366
Zhambyl	**–**	59,603
Others	**13,458**	9,124
	43,541	158,385

17. INTANGIBLE ASSETS

In millions of tenge	Goodwill	Marketing related intangible assets	Software	Other	Total
Net book value as at December 31, 2019	**98,561**	**28,960**	**19,454**	**24,197**	**171,172**
Foreign currency translation	1,003	2,775	296	1,071	5,145
Additions	–	–	2,855	3,553	6,408
Disposals	–	–	(5,576)	(2,246)	(7,822)
Amortization charge	–	–	(6,494)	(2,804)	(9,298)
Accumulated amortization and impairment on disposals	–	–	5,544	215	5,759
(Impairment)/reversal, net (Note 13)	–	(6,911)	(270)	931	(6,250)
Transfers to assets classified as held for sale	–	–	(24)	–	(24)
Other changes	–	–	1,925	1,466	3,391
Transfers	–	–	2,404	(2,404)	–
Net book value as at December 31, 2020	**99,564**	**24,824**	**20,114**	**23,979**	**168,481**
Foreign currency translation	285	643	111	772	1,811
Additions	–	–	1,613	2,634	4,247
Disposals	–	–	(1,930)	(126)	(2,056)
Amortization charge	–	–	(7,277)	(3,566)	(10,843)
Accumulated amortization and impairment on disposals	–	–	1,775	107	1,882
Reversal of impairment (Note 13)	–	–	54	5	59
Loss of control over subsidiaries	–	–	(2)	(2)	(4)
Transfers from assets classified as held for sale	–	–	42	–	42
Transfers from exploration and evaluation assets (Note 16)	–	–	–	8,768	8,768
Discontinued operations (Note 5)	–	–	(5,246)	(751)	(5,997)
Other changes	–	–	3,924	11,908	15,832
Transfers	–	–	4,210	(4,210)	–
Net book value as at December 31, 2021	**99,849**	**25,467**	**17,388**	**39,518**	**182,222**
At cost	208,594	65,371	72,230	120,317	466,512
Accumulated amortization and impairment	(108,745)	(39,904)	(54,842)	(80,799)	(284,290)
Net book value as at December 31, 2021	**99,849**	**25,467**	**17,388**	**39,518**	**182,222**
At cost	210,012	63,722	74,841	100,784	449,359
Accumulated amortization and impairment	(110,448)	(38,898)	(54,727)	(76,805)	(280,878)
Net book value as at December 31, 2020	**99,564**	**24,824**	**20,114**	**23,979**	**168,481**

As at December 31, 2021 and 2020, marketing related intangible assets were represented by trademarks of KMGI.

Carrying amount of goodwill is allocated to each of the group of cash-generating units as follows:

Cash-generating unit	December 31, 2021	December 31, 2020
Pavlodar refinery CGU	**88,553**	88,553
CGUs of KMGI	**11,296**	11,011
Total goodwill	**99,849**	**99,564**

In 2021 and 2020, based on the impairment test results, no impairment of Pavlodar refinery or KMGI goodwill was recognized. For the detailed discussion of Pavlodar refinery goodwill impairment test refer to Note 4.

18. BANK DEPOSITS

In millions of tenge	December 31, 2021	December 31, 2020
Denominated in US dollar	**559,244**	324,646
Denominated in tenge	**7,527**	14,863
Less: allowance for expected credit losses	**(200)**	(509)
	566,571	339,000

As at December 31, 2021, the weighted average interest rate for long-term bank deposits was 1.04% in US dollars and 0.94% in tenge (December 31, 2020: 1.07% in US dollars and 1.58% in tenge).

As at December 31, 2021, the weighted average interest rate for short-term bank deposits was 0.27% in US dollars and 5.68% in tenge (December 31, 2020: 0.40% in US dollars and 3.10% in tenge).

In millions of tenge	December 31, 2021	December 31, 2020
Maturities under 1 year	**510,513**	282,472
Maturities between 1 and 2 years	**140**	796
Maturities over 2 years	**55,918**	55,732
	566,571	339,000

As at December 31, 2021 bank deposits include those pledged as collateral of 56,058 million tenge (December 31, 2020: 56,528 million tenge), which are represented mainly by 51,163 million tenge at restricted bank accounts designated as a liquidation fund per requirements of subsoil use contracts (December 31, 2020: 44,497 million tenge).

19. INVESTMENTS IN JOINT VENTURES AND ASSOCIATES

In millions of tenge	Main activity	Place of business	December 31, 2021		December 31, 2020	
			Carrying value	Percentage ownership	Carrying value	Percentage ownership
Joint ventures						
Tengizchevroil LLP (TCO)	Oil and gas exploration and production	Kazakhstan	**3,105,942**	**20.00%**	2,793,887	20.00%
KMG Kashagan B.V. (Kashagan)	Oil and gas exploration and production	Kazakhstan	**2,404,820**	**50.00%**	2,256,816	50.00%
Mangistau Investments B.V. (MIBV)	Oil and gas development and production	Kazakhstan	**207,410**	**50.00%**	142,585	50.00%
KazRosGas LLP (KRG)	Processing and sale of natural gas and refined gas products	Kazakhstan	**54,317**	**50.00%**	76,702	50.00%
Ural Group Limited (UGL)	Oil and gas exploration and production	Kazakhstan	**41,453**	**50.00%**	44,585	50.00%
KazGerMunay LLP (KGM)	Oil and gas exploration and production	Kazakhstan	**32,289**	**50.00%**	32,840	50.00%
Kazakhoil-Aktobe LLP (KOA)	Production of crude oil	Kazakhstan	**25,262**	**50.00%**	20,886	50.00%
Teniz Service LLP (Teniz Service)	Design, construction and operation of infrastructure facilities, offshore oil operations support	Kazakhstan	**16,894**	**48.996%**	20,473	48.996%
Valsera Holdings B.V. (Valsera)	Oil refining	Kazakhstan	**9,590**	**50.00%**	2,253	50.00%
Asian Gas Pipeline LLP (AGP) (Note 5)	Construction and operation of the gas pipeline	Kazakhstan	**–**	**–**	291,086	50.00%
Beineu-Shymkent Gas Pipeline LLP (BSGP) (Note 5)	Construction and operation of the gas pipeline	Kazakhstan	**–**	**–**	156,771	50.00%
Other			**55,880**		43,498	
Associates						
Caspian Pipeline Consortium (CPC)	Transportation of liquid hydrocarbons	Kazakhstan / Russia	**473,880**	**20.75%**	478,134	20.75%
PetroKazakhstan Inc. (PKI)	Exploration, production and processing of oil and gas	Kazakhstan	**84,905**	**33.00%**	78,636	33.00%
Other			**37,742**		31,869	
			6,550,384		6,471,021	

All of the above joint ventures and associates are strategic for the Group's business.

As at December 31, 2021, the Group's share in unrecognized losses of joint ventures and associates was equal to 1,811 million tenge (December 31, 2020: 19,038 million tenge).

The following table summarizes the movements in the investments in 2021 and 2020:

In millions of tenge	2021	2020
On January 1	**6,471,021**	**5,590,384**
Share in profits of joint ventures and associates, net (Note 5 and 7)	**1,043,833**	511,195
Dividends received	**(415,359)**	(134,772)
Change in dividends receivable	**(48,511)**	1,680
Impairment of investments	**(64)**	(30,654)
Other changes in the equity of the joint venture	**9,391**	21,352
Additional contributions without change in ownership	**1,926**	1,586
Disposals, net	**–**	(179)
Transfers to assets classified as held for sale	**–**	(3,080)
Eliminations and adjustments[1]	**(6,308)**	2,936
Discontinued operations (Note 5)	**(662,208)**	–
Foreign currency translation	**156,663**	510,573
On December 31	**6,550,384**	**6,471,021**

On October 16, 2015, the Group sold 50% of its shares in KMG Kashagan B.V. to Samruk-Kazyna with a right to buy back all or part of the shares (further Option) effective from January 1, 2018 to December 31, 2020. On December 20, 2017, the exercise period for the Option was changed to January 1, 2020 and December 31, 2022. As of December 31, 2021 and 2020, the fair value of the Option was close to nil.

The Amsterdam Court imposed certain restrictions on 50% of shares in KMG Kashagan B.V. owned by Samruk-Kazyna (further Restrictions). During the Restrictions period, these shares of KMG Kashagan B.V. cannot be sold, transferred or pledged. As of December 31, 2021 and 2020, the Restrictions remained in force and control over the asset was not transferred to the Group.

The following tables illustrate summarized financial information of material joint ventures, based on financial statements of these entities for 2021:

In millions of tenge	TCO	Kashagan	MIBV	KRG	UGL	KGM
Non-current assets	21,900,722	4,287,173	480,741	45,961	254,152	65,184
Current assets, including	1,454,491	356,957	160,802	80,906	911	54,869
Cash and cash equivalents	331,602	164,701	101,431	31,428	830	49,531
Non-current liabilities, including	(6,307,907)	(290,869)	(138,617)	(225)	(129,822)	(18,405)
Non-current financial liabilities	(3,886,200)	(25,710)	–	–	(95,775)	–
Current liabilities, including	(1,517,597)	(59,404)	(86,154)	(18,009)	(2,335)	(37,070)
Current financial liabilities	(60,529)	(9,942)	–	–	–	–
Equity	**15,529,709**	**4,293,857**	**416,772**	**108,633**	**122,906**	**64,578**
Share of ownership	20 %	50 %	50 %	50 %	50 %	50 %
Goodwill	–	257,892	–	–	–	
Impairment of the investment	–	–	–	–	(20,000)	–
Equity method adjustments	–	–	(976)	–	–	–
Carrying amount of the investments as at December 31, 2021	**3,105,942**	**2,404,820**	**207,410**	**54,317**	**41,453**	**32,289**
Revenue	6,793,158	628,306	763,148	196,978	–	118,071
Depreciation, depletion and amortization	(894,739)	(203,568)	(66,434)	(221)	(61)	(59,318)
Finance income	2,341	484	181	2,908	–	743
Finance costs	(62,409)	(13,948)	(9,296)	–	(3,918)	(1,752)
Income tax expenses	(946,429)	(99,855)	(55,667)	(12,467)	(171)	(27,785)
Profit for the year from continuing operations	**2,208,327**	**176,846**	**160,308**	**41,903**	**(22,120)**	**12,216**
Other comprehensive income	393,933	119,162	18	4,394	3,995	1,596
Total comprehensive income	**2,602,260**	**296,008**	**160,326**	**46,297**	**(18,125)**	**13,812**
Dividends received	177,260	–	15,338	45,532	–	7,441

[1] Equity method eliminations and adjustments represent unrealized income from sale of inventory from joint ventures to subsidiaries and capitalized borrowing costs on the loans provided by the Company and subsidiaries to joint ventures.

The following tables illustrate summarized financial information of material joint ventures, based on financial statements of these entities for 2021:

In millions of tenge	KOA	Teniz Service	Valsera	AGP (Note 5)	BSGP (Note 5)
Non-current assets	50,961	13,544	487,137	–	–
Current assets, including	18,936	34,290	119,241	–	–
Cash and cash equivalents	11,652	8,728	66,868	–	–
Non-current liabilities, including	(2,671)	(357)	(443,302)	–	–
Non-current financial liabilities	–	–	(412,600)	–	–
Current liabilities, including	(16,701)	(12,997)	(100,603)	–	–
Current financial liabilities	–	–	(74,181)	–	–
Equity	**50,525**	**34,480**	**62,473**	**–**	**–**
Share of ownership	50 %	48,996 %	50 %	–	–
Impairment of the investment	–	–	(21,647)	–	–
Carrying amount of the investments as at December 31, 2021	**25,262**	**16,894**	**9,590**	**–**	**–**
Revenue	65,050	106,302	181,777	732,768	167,239
Depreciation, depletion and amortization	(3,492)	(106,478)	(38,773)	(69,439)	(16,839)
Finance income	347	14	19	1,006	–
Finance costs	(588)	(2,383)	(24,063)	(31,528)	(10,840)
Income tax expenses	(6,905)	245	(13,179)	(112,025)	–
Profit/(loss) for the year from continuing operations	**26,758**	**(6,305)**	**23,737**	**436,821**	**113,246**
Other comprehensive income/(loss)	–	–	(353)	412	–
Total comprehensive income/(loss)	**26,758**	**(6,305)**	**23,384**	**437,233**	**113,246**
Dividends received	6,003	490	–	40,216	18,000

The following tables illustrate summarized financial information of material joint ventures, based on financial statements of these entities for 2020:

In millions of tenge	TCO	Kashagan	MIBV	KRG	UGL	KGM
Non-current assets	20,221,619	4,332,838	468,069	44,681	246,111	101,629
Current assets, including	908,846	178,797	89,172	118,142	993	24,627
Cash and cash equivalents	50,588	117,269	5,267	44,459	833	19,264
Non-current liabilities, including	(6,412,967)	(371,651)	(160,711)	(207)	(115,216)	(35,090)
Non-current financial liabilities	(4,061,782)	(40,665)	–	–	(81,291)	–
Current liabilities, including	(748,064)	(129,128)	(110,186)	(9,212)	(2,718)	(25,486)
Current financial liabilities	(69,558)	(9,691)	(21,306)	–	–	–
Equity	**13,969,434**	**4,010,856**	**286,344**	**153,404**	**129,170**	**65,680**
Share of ownership	20 %	50 %	50 %	50 %	50 %	50 %
Goodwill	–	251,388	–	–	–	–
Impairment of investments	–	–	–	–	(20,000)	–
Equity method adjustments	–	–	(587)	–	–	–
Carrying amount of the investments as at December 31, 2020	**2,793,887**	**2,256,816**	**142,585**	**76,702**	**44,585**	**32,840**
Revenue	3,776,155	311,663	488,032	167,016	–	101,595
Depreciation, depletion and amortization	(700,929)	(196,789)	(75,609)	(289)	(14)	(27,084)
Finance income	3,887	2,250	239	2,293	–	511
Finance costs	(58,264)	(24,322)	(9,555)	–	(16,986)	(1,598)
Income tax expenses	(371,799)	(11,190)	(19,663)	(6,628)	(1,077)	(6,200)
Profit/(loss) for the year from continuing operations	**867,380**	**(13,922)**	**33,498**	**7,785**	**(20,531)**	**31,245**
Other comprehensive income/(loss)	1,216,017	411,964	(1,479)	16,232	11,671	4,337
Total comprehensive income	**2,083,397**	**398,042**	**32,019**	**24,017**	**(8,860)**	**35,582**
Dividends received	–	–	32,291	15,155	–	10,372

The following tables illustrate summarized financial information of material joint ventures, based on financial statements of these entities for 2020:

In millions of tenge	KOA	Teniz Service	Valsera	AGP (Note 5)	BSGP (Note 5)
Non-current assets	46,657	118,818	536,659	1,333,611	544,058
Current assets, including	10,837	50,602	99,783	616,479	147,802
Cash and cash equivalents	1,664	9,046	47,783	180,065	18,027
Non-current liabilities, including	(6,450)	(15,265)	(488,672)	(886,363)	(351,719)
Non-current financial liabilities	–	–	(471,886)	(692,254)	(335,084)
Current liabilities, including	(9,272)	(112,370)	(108,681)	(481,556)	(76,155)
Current financial liabilities	–	–	(73,012)	(464,699)	(63,101)
Equity	**41,772**	**41,785**	**39,089**	**582,171**	**263,986**
Share of ownership	50 %	48,996 %	50 %	50 %	50 %
Impairment of the investment	–	–	(17,292)	–	–
Equity method adjustments	–	–	–	–	24,778
Carrying amount of the investments as at December 31, 2020	**20,886**	**20,473**	**2,253**	**291,086**	**156,771**
Revenue	41,654	260,560	147,569	727,503	201,524
Depreciation, depletion and amortization	(7,169)	(215,594)	(36,397)	(78,212)	(18,222)
Finance income	238	1	17	7,352	–
Finance costs	(544)	(15,377)	(30,195)	(54,943)	(14,365)
Income tax expenses	(3,142)	(2,805)	(9,363)	(90,323)	–
Profit/(loss) for the year from continuing operations	**4,897**	**7,941**	**(12,275)**	**350,677**	**110,010**
Other comprehensive income/(loss)	–	–	(420)	2,964	–
Total comprehensive income/(loss)	**4,897**	**7,941**	**(12,695)**	**353,641**	**110,010**
Dividends received	8,000	2,695	4,176	53,821	–

The following tables illustrate summarized financial information of material associates, based on their financial statements for 2021:

In millions of tenge	December 31, 2021	
	CPC	PKI
Non-current assets	2,050,452	255,912
Current assets	229,939	88,537
Non-current liabilities	(32,699)	(20,905)
Current liabilities	(163,712)	(45,717)
Equity	**2,083,980**	**277,827**
Share of ownership	20,75 %	33 %
Goodwill	41,454	–
Impairment of the investment	–	(6,778)
Carrying amount of the investment as at December 31	**473,880**	**84,905**
Revenue	925,320	113,185
Depreciation, depletion and amortization	(174,032)	(17,008)
Finance income	775	249
Finance costs	(1,685)	(1,675)
Income tax expenses	(128,913)	(1,112)
Profit for the year	**438,091**	**24,369**
Other comprehensive income	60,033	3,149
Total comprehensive income	**498,124**	**27,518**
Dividends received	96,489	2,676

The following tables illustrate summarized financial information of material associates, based on their financial statements for 2020:

In millions of tenge	December 31, 2020	
	CPC	PKI
Non-current assets	2,082,957	284,545
Current assets	193,677	67,047
Non-current liabilities	(32,817)	(72,335)
Current liabilities	(134,300)	(20,426)
Equity	**2,109,517**	**258,831**
Share of ownership	20,75 %	33 %
Goodwill	40,409	–
Impairment of the investment	–	(6,778)
Carrying amount of the investment as at December 31	**478,134**	**78,636**
Revenue	872,851	83,863
Depreciation, depletion and amortization	(184,379)	(26,470)
Finance income	171	252
Finance costs	(12,080)	(2,464)
Income tax (expenses)/benefit	(99,572)	5,599
Profit/(loss) for the year	**393,165**	**(26,702)**
Other comprehensive income	180,142	13,223
Total comprehensive income/(loss)	**573,307**	**(13,479)**
Dividends received	–	2,609

The following tables illustrate aggregate financial information of individually immaterial joint ventures (the Group's proportional share):

In millions of tenge	December 31, 2021	December 31, 2020
Group share in:		
Non-current assets	**105,445**	123,063
Current assets	**56,509**	53,760
Non-current liabilities	**(67,992)**	(85,476)
Current liabilities	**(39,190)**	(65,550)
Goodwill	**172**	172
Impairment of the investment in joint venture	**–**	(3,635)
Accumulated unrecognized share of losses	**936**	18,163
Carrying amount of the investments as at December 31	**55,880**	**43,498**
Profit for the year from continuing operations	**31,230**	25,690
Other comprehensive income	**20**	47
Total comprehensive income	**31,250**	25,737
Unrecognized share of (loss)/income	**(273)**	1,225

The following tables illustrate aggregate financial information of individually immaterial associates (the Group's proportional share):

In millions of tenge	December 31, 2021	December 31, 2020
Group share in:		
Non-current assets	**47,781**	36,869
Current assets	**93,419**	56,671
Non-current liabilities	**(13,860)**	(8,998)
Current liabilities	**(90,409)**	(53,548)
Impairment of the investment in associates	**(64)**	–
Accumulated unrecognized share of losses	**875**	875
Carrying amount of the investments as at December 31	**37,742**	**31,869**
Profit for the year from continuing operations	**16,338**	11,442
Other comprehensive income	**425**	6,218
Total comprehensive income	**16,763**	**17,660**

20. INVENTORIES

In millions of tenge	December 31, 2021	December 31, 2020
Materials and supplies (at cost)	**114,580**	108,506
Refined products (at lower of cost and net realizable value)	**89,725**	56,712
Crude oil (at cost)	**55,136**	30,006
Gas products (at cost)	**56**	32,841
	259,497	228,065

As at December 31, 2021 inventories of 121,772 million tenge are pledged as collateral (December 31, 2020: 72,277 million tenge).

21. TRADE ACCOUNTS RECEIVABLE AND OTHER CURRENT FINANCIAL AND NON-FINANCIAL ASSETS

In millions of tenge	December 31, 2021	December 31, 2020
Trade accounts receivable		
Trade accounts receivable	**445,500**	455,321
Less: allowance for expected credit losses	**(27,245)**	(32,500)
	418,255	422,821
Other current financial assets		
Other receivables	**102,699**	90,904
Reservation of cash for repayment of borrowings (Note 25)	**259,459**	–
Dividends receivable	**6,375**	2,913
Less: allowance for expected credit losses	**(39,030)**	(36,746)
	329,503	57,071
Other current non-financial assets		
Advances paid and prepaid expenses	**38,149**	45,497
Taxes receivable, other than VAT	**32,090**	35,003
Other	**6,479**	11,867
Less: impairment allowance	**(104)**	(3,546)
	76,614	88,821
Total other current assets	**406,117**	**145,892**

As at December 31, 2021 and 2020 the above assets were non-interest bearing.

As at December 31, 2021 trade accounts receivable of 131,000 million tenge are pledged as collateral (December 31, 2020: 155,998 million tenge).

As at December 31, 2021, the Group reserved cash in the amount of 259,459 million tenge for repayment of the loan from The Export-Import Bank of China, including interest accrued. Cash reserved in November 2021 was used for early redemption of the loan from The Export-Import Bank of China, including interest accrued, in January 2022.

Trade accounts receivable is denominated in the following currencies as of December 31, 2021 and 2020:

In millions of tenge	December 31, 2021	December 31, 2020
US dollars	**245,124**	235,099
Tenge	**104,603**	123,824
Romanian Leu	**60,616**	57,637
Euro	**3,615**	6,059
Other currency	**4,297**	202
	418,255	422,821

Movements in the allowance for expected credit losses and impairment were as follows:

In millions of tenge	Individually impaired	
	Trade accounts receivable and other current financial assets	Other current non-financial assets
As at December 31, 2019	**68,005**	**3,719**
Charge for the year, net (Note 12)	4,225	(65)
Written-off	(9,259)	(108)
Foreign currency translation	6,275	–
As at December 31, 2020	**69,246**	**3,546**
Charge for the year, net (Note 12)	3,819	100
Written-off	(3,915)	(1,410)
Transfers and reclassifications	2,121	(2,121)
Discontinued operations (Note 5)	(4,932)	(11)
Foreign currency translation	(64)	–
As at December 31, 2021	**66,275**	**104**

There was no significant deterioration in the credit quality of trade and other accounts receivable due to COVID-19 pandemic. Uncertainties due to COVID-19 pandemic may exist in the future, and as a result, actual losses may differ from expected credit losses on accounts receivable.

Set out below is the information about credit risk exposure on the Group's trade receivables using a provision matrix:

In millions of tenge	Current	Days past due				Total
		<30 days	30-60 days	61-90 days	>91 days	
December 31, 2021						
Expected credit loss rate	**0.39%**	**3.17%**	**18.42%**	**8.28%**	**94.05%**	
Trade accounts receivable	**405,468**	**11,088**	**617**	**1,661**	**26,666**	**445,500**
Expected credit loss	**(1,561)**	**(352)**	**(114)**	**(138)**	**(25,080)**	**(27,245)**
December 31, 2020						
Expected credit loss rate	0.18%	2.94%	2.66%	4.34%	81.01%	
Trade accounts receivable	398,752	12,361	2,844	2,845	38,519	455,321
Expected credit loss	(733)	(363)	(76)	(124)	(31,204)	(32,500)

22. LOANS AND RECEIVABLES DUE FROM RELATED PARTIES

In millions of tenge	December 31, 2021	December 31, 2020
At amortized cost		
Loans due from related parties	**478,064**	558,546
Bonds receivable from Samruk-Kazyna (Note 30)	**18,433**	17,312
Other	**–**	2,470
Less: allowance for expected credit losses	**(3,249)**	(3,947)
	493,248	574,381
At fair value through profit or loss		
Loans due from related parties	**123,161**	138,024
Guaranteed returns from shareholders of joint venture	**11,750**	–
	134,911	138,024
Total loans and receivables due from related parties	**628,159**	**712,405**

Loans and receivables due from related parties are denominated in the following currencies:

In millions of tenge	December 31, 2021	December 31, 2020
Tenge	**470,677**	398,896
US dollars	**156,374**	310,175
Other foreign currencies	**1,108**	3,334
	628,159	712,405

In millions of tenge	December 31, 2021	December 31, 2020
Current portion	**485,765**	27,795
Non-current portion	**142,394**	684,610
	628,159	712,405

Movements in the allowance for expected credit losses of loans and receivables due from related parties were as follows:

In millions of tenge	
As at December 31, 2019	**3,508**
Charged, net	340
Foreign currency translation	99
As at December 31, 2020	**3,947**
Charged, net	188
Foreign currency translation	52
Discontinued operations (Note 5)	(938)
As at December 31, 2021	**3,249**

23. CASH AND CASH EQUIVALENTS

In millions of tenge	December 31, 2021	December 31, 2020
Term deposits with banks – US dollar	**512,701**	435,119
Term deposits with banks – tenge	**231,944**	163,820
Term deposits with banks – other currencies	**32,343**	54,800
Current accounts with banks – US dollar	**179,097**	397,774
Current accounts with banks – tenge	**7,003**	75,369
Current accounts with banks – other currencies	**10,037**	10,370
Cash in transit	**1,557**	7,508
Cash-on-hand and cheques	**1,337**	1,138
Less: allowance for expected credit losses	**(170)**	(34)
	975,849	1,145,864

Term deposits with banks are made for various periods of between one day and three months, depending on the immediate cash requirements of the Group.

As at December 31, 2021, the weighted average interest rate for time deposits with banks was 0.20% in US dollars, 8.67% in tenge and 5.00% in other currencies (December 31, 2020: 0.37% in US dollars, 7.74% in tenge and 1.44% in other currencies).

As at December 31, 2021 and 2020, cash and cash equivalents were not pledged as collateral for obligations of the Group.

24. EQUITY

Share capital

Total number of outstanding, issued and paid shares comprises:

	December 31, 2020 and 2021
Number of shares issued and paid, including	**610,119,493**
Par value of 27,726.63 tenge	137,900
Par value of 10,000 tenge	20,719,604
Par value of 5,000 tenge	59,707,029
Par value of 2,500 tenge	71,104,187
Par value of 2,451 tenge	1
Par value of 1,000 tenge	1
Par value of 921 tenge	1
Par value of 858 tenge	1
Par value of 838 tenge	1
Par value of 704 tenge	1
Par value of 592 tenge	1
Par value of 500 tenge	458,450,766
Share capital (thousands of tenge)	**916,540,545**

As at December 31, 2021 and 2020, the Company had only one class of issued shares. As at December 31, 2021 and 2020, common shares in the number of 239,440,103 were authorized, but not issued. In 2021, there was no issuance of any ordinary share.

Additional paid-in capital (APIC)

In 2020 the Group disposed gas pipeline assets obtained on trust management terms from the Government for 17,323 million tenge due to change in judgements. These pipelines were recognized within APIC in prior years. As of disposal date the book value of pipelines was 16,118 million tenge. The difference between cost and book value as of disposal date mainly represents depreciation of the pipelines, and was reversed from retained earnings.

In 2020, the Group transferred the difference between par and fair value of loan received from Samruk-Kazyna of 10,971 million tenge, recognized in 2011 within APIC, to retained earnings due the fact that the loan payable was settled.

In 2020, the Group transferred 3,519 million tenge, the difference between fair and nominal value of a loan receivable, from APIC to retained earnings. This loan represents the “Kazakhstan Note” receivable from CPC, and which was contributed to the Company in 2015, and fully settled in 2020 (Note 30).

Dividends

In 2021, based on the decision of Samruk-Kazyna and National Bank of RK, the Company declared and paid-off dividends for 2020 of 81.95 tenge per common share in the total of 49,999 million tenge (2020: declared dividends for 2019 of 133.97 tenge per common share in the total of 81,738 million tenge).

In 2021, the Group declared and paid-off dividends to the non-controlling interest holders of KTO, KMGI and KMG EP in the total amount of 6,192 million tenge and 5,756 million tenge, respectively (2020: 4,856 million tenge and 4,553 million tenge, respectively).

Transactions with Samruk-Kazyna

In 2021, the Company provided Samruk-Kazyna additional interest-free financial aid tranches of 43,151 million tenge (2020: 54,951 million tenge) under a long-term financial aid agreement signed on December 25, 2015, with a current maturity in 2022 (Note 30). In 2021, the difference between the fair value and nominal amount of the additional tranches of 5,222 million tenge (2020: 11,617 million tenge) was recognized as transactions with Samruk-Kazyna in the consolidated statement of changes in equity.

Distributions to Samruk-Kazyna

In 2021, in accordance with the Government decree on housing for the residents, living in Zhana-ozen town, the Group distributed 393 million tenge and paid 842 million tenge (2020: distributed 3,098 million tenge and paid 2,490 million tenge).

Additionally, in 2021, the Company reversed its distribution to Samruk-Kazyna by 308 million tenge and received reimbursement of 308 million tenge from contractor due to savings, which was recognized in prior years under the construction for social facilities in Turkestan city (2020: accrued and settled 5,497 million tenge).

Book value per share

In accordance with the decision of KASE dated October 4, 2010 financial statements shall disclose book value per share (ordinary and preferred) as of the reporting date, calculated in accordance with the KASE rules.

In millions of tenge	December 31, 2021	December 31, 2020
Total assets	**13,652,261**	14,653,287
Less: intangible assets	**182,222**	168,481
Less: total liabilities	**5,493,580**	6,016,608
Net assets	**7,976,459**	**8,468,198**
Number of ordinary shares	**610,119,493**	610,119,493
Book value per ordinary share (in thousand tenge)	**13 074**	**13 880**

Earnings per share

In thousand tenge	2021	2020 (restated)
Weighted average number of common shares for basic and diluted earnings per share	**610,119,493**	610,119,493
Basic and diluted earnings per share	**1.963**	0.282
Basic and diluted earnings per share from continuing operations	**1.385**	(0.147)
Basic and diluted earnings per share from discontinued operations	**0.578**	0.428

Non-controlling interest

The following tables illustrate information of subsidiaries in which the Group has significant non-controlling interests:

	Country of incorporation and operation	December 31, 2021		December 31, 2020	
		Non-controlling shares	Carrying value	Non-controlling shares	Carrying value
Rompetrol Downstream S.R.L.	Romania	**45.37%**	**56,869**	45.37%	53,065
KTO	Kazakhstan	**10.00%**	**49,100**	10.00%	47,314
Rompetrol Petrochemicals S.R.L.	Romania	**45.37%**	**15,935**	45.37%	15,338
KMG EP	Kazakhstan	**0.28%**	**6,115**	0.28%	5,447
Rompetrol Vega	Romania	**45.37%**	**(15,113)**	45.37%	(15,824)
Rompetrol Rafinare S.A.	Romania	**45.37%**	**(219,641)**	45.37%	(185,286)
Other			**17,453**		8,305
			(89,282)		(71,641)

The following tables illustrate summarized financial information of subsidiaries on a stand-alone basis, in which the Group has significant non-controlling interests as at December 31, 2021 and for the year then ended:

In millions of tenge	Rompetrol Downstream S.R.L.	KTO	Rompetrol Petro-chemicals S.R.L.	KMG EP	Rompetrol Vega	Rompetrol Rafinare S.A.
Summarized statement of financial position						
Non-current assets	94,973	595,294	3,078	1,515,936	30,700	142,738
Current assets	195,726	80,960	32,700	369,789	11,550	65,598
Non-current liabilities	(57,646)	(112,607)	(632)	(81,740)	(29,969)	(66,933)
Current liabilities	(107,713)	(78,607)	(24)	(141,796)	(45,589)	(625,494)
Total equity	**125,340**	**485,040**	**35,122**	**1,662,189**	**(33,308)**	**(484,091)**
Attributable to:						
Equity holder of the Parent Company	68,471	435,940	19,187	1,656,074	(18,195)	(264,450)
Non-controlling interest	56,869	49,100	15,935	6,115	(15,113)	(219,641)
Summarized statement of comprehensive income						
Revenue	81,210	238,176	–	1,026,022	81,210	1,225,765
Profit/(loss) for the year from continuing operations	**6,326**	**64,872**	**(1,503)**	**240,606**	**2,637**	**(64,132)**
Total comprehensive income/(loss) for the year, net of tax	**8,383**	**68,620**	**1,317**	**244,322**	**1,568**	**(75,719)**
Attributable to:						
Equity holder of the Parent Company	4,579	61,758	719	243,638	857	(41,364)
Non-controlling interest	3,804	6,862	598	684	711	(34,355)
Dividends declared to non-controlling interests	–	(5,076)	–	(16)	–	–
Summarized cash flow information						
Operating activity	12,442	89,776	(8)	291,813	3,547	36,361
Investing activity	3,235	(48,768)	–	(237,951)	(1,660)	(16,996)
Financing activity	(6,378)	(52,802)	–	(17)	(1,884)	(49,899)
Net increase/(decrease) in cash and cash equivalents	**9,299**	**(11,516)**	**(8)**	**57,459**	**3**	**(30,534)**

The following tables illustrate summarized financial information of subsidiaries on a stand-alone basis, in which the Group has significant non-controlling interests as at December 31, 2020 and for the year then ended:

In millions of tenge	Rompetrol Downstream S.R.L.	KTO	Rompetrol Petro-chemicals S.R.L.	KMG EP	Rompetrol Vega	Rompetrol Rafinare S.A.
Summarized statement of financial position						
Non-current assets	101,670	523,992	3,072	1,329,294	30,643	131,929
Current assets	165,467	110,803	31,415	326,047	6,406	41,149
Non-current liabilities	(60,155)	(88,539)	(659)	(81,848)	(26,078)	(80,806)
Current liabilities	(90,026)	(79,066)	(22)	(107,727)	(45,847)	(500,643)
Total equity	**116,956**	**467,190**	**33,806**	**1,465,766**	**(34,876)**	**(408,371)**
Attributable to:						
Equity holder of the Parent Company	63,891	419,876	18,468	1,460,319	(19,052)	(223,085)
Non-controlling interest	53,065	47,314	15,338	5,447	(15,824)	(185,286)
Summarized statement of comprehensive income						
Revenue	495,075	235,222	–	718,825	58,229	790,412
Profit/(loss) for the year from continuing operations	**2,505**	**73,267**	**1,840**	**127,124**	**4,528**	**(240,657)**
Total comprehensive income/(loss) for the year, net of tax	**3,249**	**69,936**	**21,642**	**65,600**	**1,025**	**(244,304)**
Attributable to:						
Equity holder of the Parent Company	1,775	62,817	11,822	65,403	560	(133,458)
Non-controlling interest	1,474	7,119	9,820	197	465	(110,846)
Dividends declared to non-controlling interests	–	(4,538)	–	(16)	–	–
Summarized cash flow information						
Operating activity	10,357	94,608	–	131,498	4,607	84,236
Investing activity	1,108	(26,354)	–	(137,375)	(3,110)	(42,881)
Financing activity	(9,736)	(47,434)	–	(2,717)	(1,643)	(6,675)
Net increase/(decrease) in cash and cash equivalents	**1,729**	**23,366**	**–**	**(1,727)**	**(146)**	**34,680**

25. BORROWINGS

In millions of tenge	December 31, 2021	December 31, 2020
Fixed interest rate borrowings	**3,041,001**	3,394,958
Weighted average interest rates	**5.72%**	5.50%
Floating interest rate borrowings	**705,326**	683,490
Weighted average interest rates (Note 31)	**5.78%**	4.38%
	3,746,327	4,078,448

Borrowings are denominated in the following currencies as of December 31:

In millions of tenge	December 31, 2021	December 31, 2020
US dollar	**3,213,820**	3,669,668
Tenge	**294,581**	318,034
Russian ruble	**221,207**	85,223
Euro	**8,424**	2,319
Other currencies	**8,295**	3,204
	3,746,327	4,078,448

In millions of tenge	December 31, 2021	December 31, 2020
Current portion	**484,980**	361,556
Non-current portion	**3,261,347**	3,716,892
	3,746,327	4,078,448

As at December 31, 2021 and 2020, the bonds comprised:

In millions of tenge	Issuance amount	Redemption date	Interest	December 31, 2021	December 31, 2020
Bonds					
Bonds LSE 2020	750 million USD	2033	3.50%	**325,735**	317,474
AIX 2019	56 billion KZT	2024	5.00%	**33,123**	45,192
Bonds LSE 2018	1.5 billion USD	2048	6.375%	**639,046**	631,832
Bonds LSE 2018	1.25 billion USD	2030	5.375%	**540,156**	530,776
Bonds LSE 2018	0.5 billion USD	2025	4.75%	**216,760**	212,117
Bonds LSE 2017	1.25 billion USD	2047	5.75%	**522,827**	516,505
Bonds LSE 2017	1 billion USD	2027	4.75%	**428,552**	419,390
Bonds ISE 2017	750 million USD	2027	4.375%	**–**	299,934
Other	–	–	–	**–**	4,593
Total				**2,706,199**	**2,977,813**

In October - November 2020, the Company made an early full repayment of bonds due 2022 and 2023 with nominal value of 906,564 thousand US dollars (equivalent to 392,214 million tenge). Bond repayment fee was 49 million US dollars (equivalent to 21,057 million tenge) (Note 14).

In October 2020, the Company placed bonds for 750 million US dollars (equivalent to 321,698 million tenge) at coupon interest rate of 3.5% per annum and due 2033.

In May 2020, KTG made an early partial repayment of bonds placed at ISE for the total amount of 41 million US dollars (equivalent to 17,816 million tenge) with bonds repayment gain of 927 million tenge.

As at December 31, 2021 and 2020, the borrowings comprised:

In millions of tenge	Issuance amount	Redemption date	Interest	December 31, 2021	December 31, 2020
Loans					
The Export-Import Bank of China (Eximbank)	1.13 billion USD	2026	6M Libor + 4.10%	**242,555**	287,387
VTB Bank (PJSC)	38 billion RUB	2027	Key Rate of Central Bank of Russia Federation + 2.25%	**221,207**	–
Halyk bank JSC (Halyk bank)	151 billion KZT	2024-2025	11.00%	**138,119**	41,207
Development bank of Kazakhstan JSC (DBK) (Note 30)	157 billion KZT	2023-2026	7.00%-9.00%	**119,243**	166,377
The Syndicate of banks (Unicredit Tiriac Bank, ING Bank, BCR, Raiffeisen Bank)	435 million USD[1]	2022-2023	1M Libor + 2.75%, 1M Libor + 2.50%, 1W Libor + 2.50%	**84,096**	118,228
Cargill	100 million USD	2022-2023	3M Libor + 2.60%, 3M Libor + 2.50%	**43,343**	–
Halyk bank	100 million USD[2]	2023	5.00%	**43,302**	42,145
DBK (Note 30)	843.6 million USD	2023	10.99%	**34,138**	107,318
ING Bank NV	250 million USD	2022	COF (0.25%) + 2.00%	**24,034**	35,029
Bank of Tokyo-Mitsubishi UFJ, Ltd (London Branch)	150 million USD	2022	COF (0.14%) + 1.70%	**22,385**	38,215
Credit Agricole	250 million USD	2022	COF (0.24%) + 2.00%	**21,533**	14,862
VTB Bank Kazakhstan and VTB Bank (PJSC)	15 billion RUB	2023	Key Rate of Central Bank of Russia Federation + 2.15%	**–**	85,223
Japan Bank for International Cooperation (JBIC)	297.5 million USD	2025	2.19% + CIRR	**–**	60,098
European Bank for Reconstruction and Development (EBRD)	68 billion KZT	2026	3M CPI + 50 basis points + 2.15%	**–**	33,786
EBRD	36 billion KZT	2026	6M CPI + 100 basis points + 2.15%	**–**	24,278
Other	–	–	–	**46,173**	46,482
Total				**1,040,128**	**1,100,635**

In 2021 Atyrau Refinery received a long-term loan from VTB Bank (PJSC) for 38,169 million Russian rubles (equivalent to 229,015 million tenge) at the rate of key rate of Central Bank of Russia + 2.25% per annum and maturity of 6 years for full early repayment of the loan from Eximbank in 2022.

In 2021 Atyrau Refinery partially repaid for 105 million US dollars (equivalent to 44,734 million tenge) including accrued interest, and received a short-term loan from Halyk bank under revolving credit facility for 100 million US dollars (equivalent to 42,813 million tenge) with 5% interest rate for full early repayment of the loan from Eximbank in 2022 and to finance working capital.

In 2021 Atyrau Refinery received a long-term loan from Halyk bank in the total amount of 109,855 million tenge with 11% interest rate and maturity of 4 years to refinance its existing loans from JBIC and DBK. The loan from Halyk bank was partially repaid for 22,827 million tenge, including accrued interest.

In 2021 Atyrau Refinery made partial repayment of the loan from Eximbank for 79 million US dollars (equivalent to 33,039 million tenge), including accrued interest. In June and November 2021, Atyrau Refinery made reservation of cash in total amount of 681 million US dollars (equivalent to 292,258 million tenge) for repayment of the loan from Eximbank and repaid the loan in July 2021 for 77 million US dollars (equivalent to 32,799 million tenge) and in January 2022 for 604 million US dollars (equivalent to 259,459 million tenge), including accrued interest.

In 2021 Atyrau Refinery made full early repayment of the loan from JBIC for 155 million US dollars (equivalent to 67,392 million tenge), including accrued interest.

[1] 75 million USD with revolving credit facility.
[2] Revolving credit facility.

In 2021 Atyrau Refinery made full and partial repayment of the loans from DBK for 142 million US dollars (equivalent to 59,507 million tenge), including accrued interest, and 29,409 million tenge, including accrued interest.

In 2021 KMGI received short-term and long-term loans to finance working capital from Cargill at the rate of 3M Libor + + 2.60% and 3M Libor + 2.50%, respectively, for 50 million US dollars each (equivalent to 20,997 million tenge).

In 2021 KMGI partially repaid a short-term loan from ING Bank NV for 29 million US dollars (equivalent to 12,632 million tenge), including accrued interest.

In 2021 KMGI made partial repayment of its syndicated loan for 97 million US dollars (equivalent to 41,447 million tenge).

In 2020 Atyrau refinery made partial repayment of the loan from Eximbank for 289 million US dollars (equivalent to 112,494 million tenge), including accrued interest.

In 2020 Atyrau refinery and KTG received an additional long-term loan under the loan agreement with DBK for the total amount of 49,609 million tenge and made a partial redemption of existing loans for 27,832 million tenge, including accrued interest.

In 2020 Atyrau refinery and Pavlodar refinery, made a partial repayment of the loan from DBK for 98 million US dollars (equivalent to 39,005 million tenge), including accrued interest.

In November 2020, KTG received a long-term loan from VTB Bank Kazakhstan and VTB Bank (PJSC) for the total amount of 15,152 million Russian rubles (equivalent to 84,621 million tenge) at the rate of key rate of Central Bank of Russia + 2.15% per annum and maturity of 3 years. KTG used proceeds from these loans to make a full early repayment of its syndicated loan of 205 million US dollars (equivalent to 86,971 million tenge), including accrued interest.

Changes in liabilities arising from financing activities:

In millions of tenge	Short-term loans	Long-term loans	Bonds
On January 1	184,370	916,265	2,977,813
Received in cash	82,753	368,343	–
Repayment of principal in cash	(108,134)	(218,733)	(12,685)
Repayment of principal and interest by reserved cash	–	(32,799)	–
Interest accrued	9,573	72,248	159,810
Interest paid	(9,427)	(52,876)	(185,140)
Discount (Note 14)	–	–	–
Bonds redemption fee (Note 14)	–	–	–
Bonds redemption gain	–	–	–
Foreign currency translation	3,227	2,684	66,967
Foreign exchange loss	410	4,844	7,679
Discontinued operations (Note 5)		(182,568)	(308,245)
Other	–	(52)	–
On December 31	162,772	877,356	2,706,199
Current portion	162,772	292,708	29,500
Non-current portion	–	584,648	2,676,699

This syndicated loan was raised to partially fund a strategic project – construction of three compressor stations at MG "Beineu-Bozoi-Shymkent".

In December, 2020, Atyrau refinery received a long-term loan from Halyk bank for the total amount of 41,089 million tenge with 11% interest rate and maturity of 4 years, and used it to fully refinance its long-term loan from Halyk bank for 144 million US dollars (equivalent to 59,007 million tenge), including accrued interest.

In 2020 KMGI received and repaid short-term loans to finance working capital from Bank of Tokyo-Mitsubishi UFJ, Ltd (London Branch) at the rate of COF (0.18%) + 1.50% for 91 million US dollars (equivalent to 37,539 million tenge).

In 2020 KMGI received and repaid short-term loans to finance working capital from ING Bank NV at the rate of COF (0.28%) + 2.00% for 83 million US dollars (equivalent to 34,409 million tenge).

In 2020 KTG made a partial repayment of the loan from EBRD for the total amount of 12,696 million tenge, including accrued interest.

In 2020, KMGI received and repaid short-term loans to finance working capital from Credit Agricole at the rate of COF (0.29%) + 2.00% for 33 million US dollars (equivalent to 13,655 million tenge).

2021				2020
Total	**Short-term loans**	**Long-term loans**	**Bonds**	**Total**
4,078,448	**70,843**	**974,937**	**2,791,724**	**3,837,504**
451,096	169,088	186,641	321,250	676,979
(339,552)	(64,921)	(299,501)	(442,933)	(807,355)
(32,799)	–	–	–	–
241,631	7,265	64,931	163,890	236,086
(247,443)	(7,278)	(64,953)	(164,192)	(236,423)
–	–	(11,002)	–	(11,002)
–	–	–	21,057	21,057
–	–	–	(927)	(927)
72,878	4,790	9,164	205,725	219,679
12,933	4,583	54,367	82,365	141,315
(490,813)	–	–	–	–
(52)	–	1,681	(146)	1,535
3,746,327	**184,370**	**916,265**	**2,977,813**	**4,078,448**
484,980	184,370	133,094	44,092	361,556
3,261,347	–	783,171	2,933,721	3,716,892

Covenants

The Group is required to comply with the financial and non-financial covenants under the terms of loan agreements. On June 16, 2021, the Company received a consent of the holders of Eurobonds with maturities in 2025, 2027, 2030, 2047, 2048 to bring the terms of these issues in line with the terms of the issue of KMG Eurobonds in 2020. As of December 31, 2021 and 2020, the Group complied with all financial and non-financial covenants.

Hedge of net investment in the foreign operations

As at December 31, 2021, certain borrowings denominated in foreign currency were designated as hedge instrument for the net investment in the foreign operations. These borrowings are being used to hedge the Group's exposure to the US dollar foreign exchange risk on these investments. In 2021 loss of 66,967 million tenge (2020: loss of 205,725 million tenge) on the translation of these borrowings were transferred to other comprehensive income and offset against translation gains of the net investments in foreign operations.

There is an economic relationship between the hedged item and the hedging instrument as the net investment creates a translation risk that will match the foreign exchange risk on the US Dollars borrowings. The Group has established a hedge ratio of 1:1 as the underlying risk of the hedging instrument is identical to the hedged risk component. The hedge ineffectiveness will arise when the amount of the investment in the foreign subsidiary becomes lower than the amount of the fixed rate borrowings. As at December 31, 2021 and 2020, there was no ineffective portion of the hedge.

26. PROVISIONS

In millions of tenge	Asset retirement obligations	Provision for environ-mental obligation	Provision for taxes	Provision for gas transpor-tation	Employee benefit obligations	Other	Total
As at December 31, 2019	**154,394**	**60,346**	**18,184**	**27,965**	**59,059**	**57,179**	**377,127**
Foreign currency translation	2,258	3,706	(1)	2,801	922	5,370	15,056
Change in estimate	13,049	(1,421)	–	–	–	(3)	11,625
Unwinding of discount (Note 14)	11,001	2,242	–	–	3,605	130	16,978
Provision for the year	886	5,454	722	–	13,099	15,857	36,018
Recovered	(1,189)	–	(1,451)	–	–	(5,041)	(7,681)
Use of provision	(664)	(5,326)	(7,019)	–	(6,767)	(62,958)	(82,734)
As at December 31, 2020	**179,735**	**65,001**	**10,435**	**30,766**	**69,918**	**10,534**	**366,389**
Foreign currency translation	543	1,087	118	453	266	78	2,545
Change in estimate	(55)	(2,514)	–	–	503	151	(1,915)
Unwinding of discount (Note 14)	10,343	3,759	–	–	4,515	152	18,769
Provision for the year	785	2,628	2,392	–	(2,905)	2,974	5,874
Recovered	(1,329)	–	(748)	–	–	(1,207)	(3,284)
Use of provision	(332)	(6,775)	(1,834)	–	(6,235)	(8,055)	(23,231)
Discontinued operations (Note 5)	(87,953)	–	(1)	(31,219)	(636)	(93)	(119,902)
As at December 31, 2021	**101,737**	**63,186**	**10,362**	**–**	**65,426**	**4,534**	**245,245**

Detailed description of significant provisions, including critical estimates and judgments used, is included in Note 4.

Current portion and long-term portion are segregated as follows:

In millions of tenge	Asset retirement obligations	Provision for environ-mental obligation	Provision for taxes	Provision for gas transport-tation	Employee benefit obligations	Other	Total
Current portion	**1,196**	**4,627**	**10,362**	**–**	**3,809**	**2,315**	**22,309**
Long-term portion	**100,541**	**58,559**	**–**	**–**	**61,617**	**2,219**	**222,936**
As at December 31, 2021	**101,737**	**63,186**	**10,362**	**–**	**65,426**	**4,534**	**245,245**
Current portion	700	8,094	10,435	30,766	5,691	7,549	63,235
Long-term portion	179,035	56,907	–	–	64,227	2,985	303,154
As at December 31, 2020	179,735	65,001	10,435	30,766	69,918	10,534	366,389

27. TRADE ACCOUNTS PAYABLE AND OTHER FINANCIAL AND NON-FINANCIAL LIABILITIES

In millions of tenge	December 31, 2021	December 31, 2020
Trade accounts payable	**519,201**	**536,922**
Other financial liabilities		
Due to employees	**44,401**	54,741
Other trade payables	**16,446**	21,215
Dividends payable	**534**	195
Financial guarantees (Note 5)	**122**	14,910
Other	**23,643**	28,342
	85,146	**119,403**
Current portion	**69,231**	86,440
Non-current portion	**15,915**	32,963
Other non-financial liabilities		
Contract liabilities	**154,696**	118,537
Other	**18,802**	39,315
	173,498	157,852
Current portion	**134,269**	129,021
Non-current portion	**39,229**	28,831

As of December 31, 2021 and 2020, trade accounts payable were denominated in the following currencies:

In millions of tenge	December 31, 2021	December 31, 2020
US dollars	**351,383**	221,097
Tenge	**83,705**	249,108
Romanian Leu	**71,932**	44,457
Euro	**3,381**	6,558
Other currency	**8,800**	15,702
Total	**519,201**	**536,922**

As at December 31, 2021 and 2020, trade accounts payable and other financial liabilities were not interest bearing.

28. OTHER TAXES PAYABLE

In millions of tenge	December 31, 2021	December 31, 2020
VAT	**49,002**	90,883
Mineral Extraction Tax	**26,439**	10,147
Rent tax on crude oil export	**23,702**	10,054
Individual income tax	**6,834**	5,746
Export customs duty	**5,842**	–
Social tax	**5,217**	5,691
Withholding tax from non-residents	**2,357**	1,556
Excise tax	**1,719**	2,239
Other	**5,312**	3,947
	126,424	130,263

29. INCOME TAX EXPENSES

As at December 31, 2021 income taxes prepaid of 24,900 million tenge (2020: 70,301 million tenge) are mainly represented by corporate income tax. As at December 31, 2021 income taxes payable of 6,882 million tenge (2020: 8,967 million tenge) are mainly represented by corporate income tax.

Income tax expense comprised the following for the years ended December 31:

In millions of tenge	2021	2020 (restated)
Current income tax		
Corporate income tax	**116,567**	60,634
Withholding tax on dividends and interest income	**42,886**	9,416
Excess profit tax	**1,237**	(194)
Deferred income tax		
Corporate income tax	**25,747**	(7,616)
Withholding tax on dividends	**34,990**	26,021
Excess profit tax	**(34)**	(2,985)
Income tax expenses	**221,393**	**85,276**

A reconciliation of income tax expenses applicable to profit before income tax at the statutory income tax rate (20% in 2021 and 2020) to income tax expenses was as follows for the years ended December 31:

In millions of tenge	2021	2020 (restated)
Profit/(loss) before income tax from continuing operations	**1,066,255**	(4,155)
Profit before income tax from discontinued operations	**407,993**	282,355
Statutory tax rate	**20 %**	20 %
Income tax expense on accounting profit	**294,850**	55,640
Share in profit of joint ventures and associates	**(87,497)**	(76,218)
Other non-deductible expenses and non-taxable income	**71,398**	49,874
Effect of different corporate income tax rates	**18,017**	30,039
Excess profit tax	**1,203**	(3,179)
Change in unrecognized deferred tax assets	**(21,063)**	50,147
Income tax expenses	**276,908**	**106,303**
Income tax expenses attributable to continued operations	**221,393**	85,276
Income tax expenses attributable to discontinued operations	**55,515**	21,027
	276,908	106,303

Deferred tax balances, calculated by applying the statutory tax rates effective at the respective reporting dates to the temporary differences between the tax basis of assets and liabilities and the amounts reported in the consolidated financial statements, are comprised of the following at December 31:

In millions of tenge	Corporate income tax	Excess profit tax	Withholding tax
Deferred tax assets			
Property, plant and equipment	22,769	–	–
Tax loss carryforward	556,394	–	–
Employee benefits related accruals	4,975	–	–
Impairment of financial assets	1	–	–
Environmental liability	3,089	–	–
Other	57,772	–	–
Less: unrecognized deferred tax assets	(561,198)	–	–
Less: deferred tax assets offset with deferred tax liabilities	(49,767)	–	–
Deferred tax assets	**34,035**	**–**	**–**
Deferred tax liabilities			
Property, plant and equipment	125,840	358	–
Undistributed earnings of joint venture	–	–	465,891
Other	3,441	–	–
Less: deferred tax assets offset with deferred tax liabilities	(49,767)	–	–
Deferred tax liabilities	**79,514**	**358**	**465,891**
Net deferred tax liability	**45,479**	**358**	**465,891**
Deferred tax expense			

Deferred corporate income tax and excess profit tax are determined with reference to individual subsoil use contracts. Deferred corporate income tax is also determined for activities outside of the scope of subsoil use contracts. A deferred tax asset is recognized only to the extent that it is probable that future taxable profits will be available against which the asset can be utilized. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit will be realized. Unrecognized deferred tax asset arising mainly from tax losses carry forward amounted to 561,198 million tenge as at December 31, 2021 (2020: 582,261 million tenge).

Tax losses carry forward as at December 31, 2021 and 2020 in the RK expire for tax purposes after ten years from the date they are incurred.

The movements in the deferred tax liability/(asset) were as follows:

In millions of tenge	Corporate income tax	Excess profit tax	Withholding tax
Net deferred tax liability as at January 1	**77,829**	**392**	**419,083**
Foreign currency translation	296	–	11,818
Tax expense/(income) during the year recognized in profit and loss	39,577	(34)	34,990
Tax expense/(income) during the year recognized in other comprehensive income	48	–	–
Discontinued operations (Note 5)	(72,271)	–	–
Net deferred tax liability as at December 31	**45,479**	**358**	**465,891**

	2021					2020
Total	Recognized in profit and loss	Corporate income tax	Excess profit tax	Withholding tax	Total	Recognized in profit and loss
22,769	(12,831)	35,848	–	–	35,848	968
556,394	(35,419)	591,813	–	–	591,813	35,367
4,975	(133)	5,342	–	–	5,342	78
1	(12)	13	–	–	13	3
3,089	(1,207)	4,296	–	–	4,296	(532)
57,772	10,726	52,186	–	–	52,186	(2,091)
(561,198)	21,063	(582,261)	–	–	(582,261)	(50,147)
(49,767)	(5,809)	(48,647)	–	–	(48,647)	2,832
34,035	**(23,622)**	**58,590**	**–**	**–**	**58,590**	**(13,522)**
126,198	11,007	179,394	392	–	179,786	(19,811)
465,891	34,990	–	–	419,083	419,083	26,021
3,441	10,723	5,672	–	–	5,672	1,018
(49,767)	(5,809)	(48,647)	–	–	(48,647)	2,832
545,763	**50,911**	**136,419**	**392**	**419,083**	**555,894**	**10,060**
511,728	**–**	**77,829**	**392**	**419,083**	**497,304**	
	74,533					**23,582**

2021				2020
Total	Corporate income tax	Excess profit tax	Withholding tax	Total
497,304	**75,790**	**3,377**	**356,581**	**435,748**
12,114	1,601	–	36,481	38,082
74,533	546	(2,985)	26,021	23,582
48	(108)	–	–	(108)
(72,271)	–	–	–	–
511,728	**77,829**	**392**	**419,083**	**497,304**

30. RELATED PARTY DISCLOSURES

Terms and conditions of transactions with related parties

Related party transactions were made on terms agreed between the parties that may not necessarily be at market rates, except for certain regulated services, which are provided based on the tariffs available to related and third parties. Outstanding balances at the year-end are mainly unsecured and interest free and settlement occurs in cash, except as indicated below. The Group recognizes allowances for ECL on amounts owed by related parties.

Transactions balances

The following table provides the balances of transactions with related parties as at December 31, 2021 and 2020:

In millions of tenge	December 31	Due from related parties	Due to related parties	Cash and deposits placed with related parties	Borrowings payable to related parties
Samruk-Kazyna entities	**2021**	**497,242**	**1,074**	**–**	**33,123**
	2020	402,272	5,921	–	45,192
Associates	**2021**	**12,249**	**3,009**	**–**	**–**
	2020	4,345	3,541	–	–
Other state-controlled parties	**2021**	**2,349**	**638**	**86,481**	**153,381**
	2020	4,116	113	126,443	273,695
Joint ventures	**2021**	**166,869**	**170,923**	**–**	**–**
	2020	357,832	246,555	–	–

Due from/to related parties

Samruk-Kazyna entities

As at December 31, 2021 due from Samruk-Kazyna entities is mainly represented by the bonds receivable from the Samruk-Kazyna of 18,373 million tenge, net of expected credit losses (December 31, 2020: 17,265 million tenge) (Note 22) and the financial aid provided to Samruk-Kazyna for 451,981 million tenge, net of expected credit losses (December 31, 2020: 379,159 million tenge) (Note 24).

Joint ventures

As at December 31, 2021 due from joint ventures were mainly represented by the loans given to PetroKazakhstan Oil Products LLP (further PKOP) of 74,612 million tenge (December 31, 2020: 96,958 million tenge), UGL of 48,549 million tenge (December 31, 2020: 41,066 million tenge) and advances paid to TCO for 8,744 million tenge (December 31, 2020: 16,094 million tenge) under crude oil and LPG purchase contract.

As at December 31, 2021 due to joint ventures were mainly represented by accounts payable for crude oil to TCO for 130,786 million tenge (December 31, 2020: 67,578 million tenge).

Cash and deposits placed with related parties

Other state-controlled parties

As at December 31, 2021, the decrease of cash and deposits placed with related parties is mainly due to partial withdraw of deposits for 100 million US dollars (equivalent to 42,422 million tenge as of the withdrawal date).

Borrowings payable to related parties

Other state-controlled parties

As at December 31, 2021 the borrowings payable to related parties are represented by loans received from DBK by Atyrau refinery and Pavlodar refinery of 153,381 million tenge (December 31, 2020: 273,695 million tenge) (Note 25).

Proceeds from loans given to related parties

In 2021 the Group received proceeds from principal and interest redemption of the loan issued to PKOP for 24,438 million tenge and 3,507 million tenge, respectively (2020: 24,588 million tenge and 5,492 million tenge, respectively), proceeds from interest on BSGP, joint venture of KTG, for 9,628 million tenge (2020: principal for 48,133 million tenge and interest for 9,336 million tenge). In November 2021, KTG was transferred to Samruk-Kazyna (Note 5).

Transactions turnover

The following table provides the total amount of transactions, which have been entered into with related parties during 2021 and 2020:

In millions of tenge		Sales to related parties	Purchases from related parties	Interest earned from related parties	Interest incurred to related parties
Samruk-Kazyna entities	**2021**	**17,589**	**11,500**	**36,805**	**6,448**
	2020	13,793	24,316	30,055	2,293
Associates	**2021**	**53,754**	**33,549**	**–**	**–**
	2020	21,000	24,710	2,740	–
Other state-controlled parties	**2021**	**32,810**	**16,788**	**315**	**21,529**
	2020	42,880	18,765	12,035	26,567
Joint ventures	**2021**	**270,274**	**1,678,338**	**30,626**	**1,109**
	2020	322,894	1,128,533	31,397	4,763

Sales to related parties / purchases from related parties

Joint ventures

In 2021, sales to joint ventures were mainly represented by transportation and cargo servicing provided to TCO for 16,698 million tenge (2020: 34,399 million tenge), sale of compressor station to BSGP for 42,886 million tenge (2020: 43,667 million tenge) (Note 15), transportation charges and oil servicing provided to MangystauMunaiGas JSC, subsidiary of MIBV, for 53,892 million tenge and for 85,094 million tenge, respectively (2020: 53,591 million tenge and 72,251 million tenge, respectively).

In 2021, purchases from joint ventures were mainly attributable to purchases of crude oil from TCO to perform the oil delivery customer contract for 1,234,019 million tenge (2020: 687,896 million tenge), and transportation services provided by BSGP for 167,217 million tenge (2020: 201,524 million tenge) and AGP for 75,287 million tenge (2020: 106,160 million tenge).

Key management employee compensation

Total compensation to key management personnel (members of the Boards of directors and Management boards of the Group) included in general and administrative expenses in the accompanying consolidated statement of the comprehensive income was equal to 7,899 million tenge and 8,159 million tenge for the years ended December 31, 2021 and 2020, respectively. Compensation to key management personnel mainly consists of contractual salary and performance bonus based on operating results.

31. FINANCIAL RISK MANAGEMENT, OBJECTIVES AND POLICIES

The Group's principal financial instruments mainly consist of borrowings, loans given, financial guarantees, cash and cash equivalents, bank deposits as well as accounts receivable and accounts payable. The Group is exposed to interest rate risk, foreign currency risk and credit risk. The Group further monitors the market risk and liquidity risk arising from all financial instruments.

Market risk

The Group takes on exposure to market risks. Market risks arise from open positions in interest rate, currency, and securities, all of which are exposed to general and specific market movements. The Group manages market risk through periodic estimation of potential losses that could arise from adverse changes in market conditions and establishing appropriate margin and collateral requirements. The sensitivity analyses in the following sections relate to the position as of December 31, 2021 and 2020.

Foreign currency risk

As a result of significant borrowings and accounts payable denominated in the US dollars, the Group's consolidated statement of financial position can be affected significantly by movement in the US dollar / tenge exchange rates. The Group also has transactional currency exposures. Such exposure arises from revenues in the US dollars. The Group has a policy on managing its foreign currency risk in US dollar by matching US dollar denominated financial assets with US dollar denominated financial liabilities. The following table demonstrates the sensitivity to a reasonably possible change in the US dollar exchange rate, with all other variables held constant, of the Group's profit before income tax (due to changes in the cash flows of monetary assets and liabilities). The sensitivity of possible changes in exchange rates for other currencies are not considered due to its insignificance to the consolidated financial results of Group's operations.

In millions of tenge	Increase/ (decrease) in tenge to US dollar exchange rate	Effect on profit before tax
2021		
	+13 %	**(252,408)**
	(10 %)	**194,160**
2020		
	+14 %	(335,219)
	(11 %)	263,387

Interest rate risk

Interest rate risk is the risk that the value of a financial instrument will fluctuate due to changes in market interest rates. The Group's exposure to the risk of changes in market interest rates relates primarily to the Group's long-term borrowings with floating interest rates. The Group's policy is to manage its interest rate cost using a mix of fixed and variable rate borrowings.

The following table demonstrates the sensitivity to a reasonably possible change in interest rates, with all other variables held constant, of the Group's profit before income tax (through the impact on floating rate borrowings). There is no significant impact on the Group's equity.

In millions of tenge	Increase/ decrease in basis points	Effect on profit before tax
2021		
LIBOR	**+1,25**	**(8,817)**
	-0,25	**1,763**
2020		
LIBOR	+1,00	(6,835)
	-0,25	1,709

Credit risk

The Group trades only with recognized, creditworthy parties. It is the Group's policy that all customers who wish to trade on credit terms are subject to credit verification procedures. In addition, receivable balances are monitored on an ongoing basis with the result that the Group's exposure to bad debts is not significant. The maximum exposure is the carrying amount as disclosed in Note 14. There are no significant concentrations of credit risk within the Group.

With respect to credit risks arising on other financial assets of the Group, which comprise cash and cash equivalents, bank deposits, loans and receivables from related parties and other financial assets, the Group's exposure to credit risks arises from default of the counterparty, with a maximum exposure equal to the carrying amount of these instruments.

The table below shows the risk profile of the Group's cash and cash equivalents, short-term and long-term deposits held in banks as at 31 December 2021 and 2020 using the Fitch credit ratings, or in their absence, using their equivalent rates in S&P and Moody's:

	As at 31 December	
	2021	**2020**
AA- to A+	**8 %**	12 %
A to A-	**34 %**	30 %
BBB+ to BBB-	**54 %**	16 %
BB+ to BB-	**1 %**	41 %
B+ to B-	**3 %**	1 %

Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in raising funds to meet commitments associated with its financial liabilities. Liquidity risk may result from an inability to sell a financial asset quickly at close to its fair value.

Liquidity requirements are monitored on a regular basis and management ensures that sufficient funds are available to meet any commitments as they arise.

The table below summarizes the maturity profile of the Group's financial liabilities as at December 31, 2021 and 2020 based on contractual undiscounted payments.

In millions of tenge	Due less than one month	Due later than one month but not later than three months	Due later than three months but not later than one year	Due later than one year but not later than five years	Due after 5 years[1]	Total
As at December 31, 2021						
Borrowings[1]	**268,383**	**92**	**379,336**	**1,432,280**	**4,283,944**	**6,364,035**
Trade accounts payable	**250,549**	**260,874**	**7,778**	**–**	**–**	**519,201**
Financial guarantees[2]	**–**	**4**	**312**	**1,252**	**–**	**1,568**
Lease liabilities	**1,896**	**1,229**	**6,595**	**12,763**	**22,879**	**45,362**
Other financial liabilities	**38,906**	**17,650**	**15,932**	**16,979**	**–**	**89,467**
	559,734	**279,849**	**409,953**	**1,463,274**	**4,306,823**	**7,019,633**
As at December 31, 2020						
Borrowings[1]	64,664	15,128	449,943	1,699,247	4,607,751	6,836,733
Trade accounts payable	208,648	318,195	10,079	–	–	536,922
Financial guarantees[2]	–	16,339	48,734	172,619	313	238,005
Lease liabilities	395	515	16,061	26,236	20,448	63,655
Other financial liabilities	33,377	23,337	24,486	11,096	54,586	146,882
	307,084	373,514	549,303	1,909,198	4,683,098	7,822,197

Capital management

The primary objective of the Group's capital management is to maximise the shareholder value. The Group manages its capital to ensure that Group will be able to continue as a going concern while maximising the return to stakeholders through the optimisation of the debt and equity balance.

The Company seeks to maintain a prudent capital structure to support its capital investment plans and maintain investment grade credit rating through the cycle. Maintaining sufficient financial flexibility is considered strategically important to mitigate industry cyclicality while also enabling the pursuit of organic and inorganic investment opportunities. The Company has a comprehensive and disciplined internal approval process for capital expenditures, new projects and debt incurrence.

For the purpose of the Group's capital management, the capital structure of the Group consists of borrowings disclosed in Note 25 less cash (Note 23) and short-term deposits (Note 18) and equity, comprising share capital, additional paid-in capital, other reserves and retained earnings as disclosed in Note 24.

The Group's management regularly reviews the capital structure. As part of this review, management considers the cost of capital and the risks associated with each class of capital. Also to achieve this overall objective, the Group's capital management, among other things, aims to ensure that it meets financial covenants attached to borrowings that define capital structure requirements. There have been no breaches of the financial covenants of any borrowing in the years ended December 31, 2021 and 2020 (Note 25).

In millions of tenge	December 31, 2021	December 31, 2020
Borrowings	**3,746,327**	4,078,448
less: cash, cash equivalents and short-term bank deposits	**1,486,362**	1,428,336
Net debt	**2,259,965**	2,650,112
Equity	**8,158,681**	8,636,679
Capital and net debt	**10,418,646**	11,286,791

No changes were made in the overall strategy, objectives, policies or processes for managing capital during the years ended December 31, 2021 and 2020.

[1] The Group excludes from the maturity profile table the borrowings payable to project partners under the carry-in financing agreements, due to the uncertainty of maturity of these loans. As of December 31, 2021, the borrowings due to partners were 12,355 million tenge (December 31, 2020: 7,175 million tenge).

[2] The Group includes financial guarantees to the maturity profile table, however, the cash outflow in relation to financial guarantees is subject to certain conditions. Financial guarantee is a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because of specified debtor fails to make payment when due in accordance with the original or modified terms of debt instrument. In 2021 and 2020 there was no significant instances of financial guarantees execution.

Fair values of financial instruments

The carrying amount of the Group financial instruments as at December 31, 2021 and 2020 are reasonable approximation of their fair value, except for the financial instruments disclosed below:

In millions of tenge					December 31, 2021
	Carrying amount	Fair value	Fair value by level of assessment		
			Level 1	Level 2	Level 3
Bonds receivable from Samruk-Kazyna	**18,373**	**16,925**	**–**	**16,925**	**–**
Loans given to related parties at amortized cost, lease receivables from joint venture	**474,875**	**472,528**	**–**	**448,658**	**23,870**
Fixed interest rate borrowings	**3,041,001**	**3,556,705**	**3,210,632**	**346,073**	**–**
Floating interest rate borrowings	**705,326**	**755,347**	**–**	**755,347**	**–**
Financial guarantee issued (Note 5)	**122**	**122**	**–**	**–**	**122**

In millions of tenge					December 31, 2020
	Carrying amount	Fair value	Fair value by level of assessment		
			Level 1	Level 2	Level 3
Bonds receivable from Samruk-Kazyna	17,265	16,916	–	16,916	–
Loans given to related parties at amortized cost, lease receivables from joint venture	557,116	538,063	–	372,823	165,240
Fixed interest rate borrowings	3,394,958	4,103,404	3,640,931	462,473	–
Floating interest rate borrowings	683,490	699,509	–	699,509	–
Financial guarantee issued (Note 5)	14,910	15,464	–	–	15,464

The fair value of bonds receivable from the Samruk-Kazyna and other debt instruments have been calculated by discounting the expected future cash flows at market interest rates.

All financial instruments for which fair value is recognized or disclosed are categorized within the fair value hierarchy, based on the lowest level input that is significant to the fair value measurement as a whole, as follows:

- Level 1 – quoted (unadjusted) market prices in active markets for identical assets or liabilities;
- Level 2 – valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable;
- Level 3 – valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

There were no transfers between Level 1 and Level 2 during the reporting period, and no transfers into or out of Level 3 category.

For assets and liabilities that are recognized at fair value on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period. There were no changes in the Group's valuation processes, valuation techniques, and types of inputs used in the fair value measurements during the year.

The significant unobservable inputs used in the fair value measurements categorized within Level 3 of the fair value hierarchy are shown below:

	Valuation technique	Significant unobservable inputs	Range as of December 31	
			2021	2020
Loans given to related parties at amortized cost, lease receivables from joint venture	Discounted cash flow method	Interest/discount rate	**4.1-11.5%**	7.54-9.9%
Financial guarantee issued			**4.5%**	4.9%

32. CONTINGENT LIABILITIES AND COMMITMENTS

Operating environment

Kazakhstan continues economic reforms and development of its legal, tax and regulatory frameworks as required by a market economy. The future stability of the Kazakhstan economy is largely dependent upon these reforms and developments and the effectiveness of economic, financial and monetary measures undertaken by the Government.

Since the beginning of March 2020, the world markets are experiencing a significant volatility in oil demand and oil prices, in particular as a result of COVID-19 pandemic. Kazakhstan tenge value has fallen significantly against the major world currencies. In the opinion of the Company's management, these trends will not have a material impact on the Company's future financial position, results of operations and business prospects.

Commodity price risk

The Group generates most of its revenue from the sale of commodities, primarily crude oil and oil products. Historically, the prices of these products have been volatile and have fluctuated widely in response to changes in supply and demand, market uncertainty, the performance of the global or regional economies and cyclicality in industries. Prices may also be affected by the Government actions, including the imposition of tariffs and import duties, speculative trades, an increase in capacity or oversupply of the Group's products in its main markets. These external factors and the volatility of the commodity markets make it difficult to estimate future prices. A substantial or extended decline in commodity prices would materially and adversely affect the Group's business and the consolidated financial results and cash flows of operations. The Group mainly does not hedge its exposure to the risk of fluctuations in the price of its products.

Taxation

Kazakhstan's tax legislation and regulations are subject to ongoing changes and varying interpretations. Instances of inconsistent opinions between local, regional and national tax authorities are not unusual, including opinions with respect to IFRS treatment of revenues, expenses and other items in the financial statements. The current regime of penalties and interest related to reported and discovered violations of Kazakhstan's tax laws are severe. Due to uncertainties associated with Kazakhstan's tax system, the ultimate amount of taxes, penalties and interest, if any, may be in excess of the amount expensed to date and accrued at December 31, 2021. As at December 31, 2021, Management believes that its interpretation of the relevant legislation is appropriate and that it is probable that the Group's tax positions will be sustained, except as provided for or otherwise disclosed in these consolidated financial statements.

Transfer pricing control

Transfer pricing control in Kazakhstan has a very wide scope and applies to many transactions that directly or indirectly relate to international business regardless of whether the transaction participants are related or not. The transfer pricing legislation requires that all taxes applicable to a transaction should be calculated based on market price determined in accordance with the arm's length principle. The law on transfer pricing came into force in Kazakhstan from January 1, 2009. The law is not explicit and there is little precedence with some of its provisions. Moreover, the law is not supported by detailed guidance for application of transfer pricing control to various types, as a result, there is a risk that the tax authorities may take a position that differs from the Group's position, which could result in additional taxes, fines and interest. As at December 31, 2021 management believes that its interpretation of the transfer pricing legislation is appropriate and that it is probable that the Group's positions with regard to transfer pricing will be sustained.

Comprehensive tax audit at Atyrau refinery for 2015-2017

On December 15, 2020, based on 2015-2017 comprehensive tax audit, Atyrau refinery received additional tax assessment for VAT for 9,257 million tenge, including penalties, and reduction in tax carry-forward losses for 29,026 million tenge. Atyrau refinery has not agreed with tax audit results, and, on January 28, 2021, sent an appeal to the RK Ministry of Finance. As of December 31, 2021, appeal consideration was suspended by the RK Ministry of Finance until clarification of the circumstances.
The Group believes that the risk of additional tax assessment is remote, as such, the Group did not recognize any provisions as of December 31, 2021.

Legal issues and claims

The civil litigation at KMGI

Faber Invest & Trade Inc. (further Faber), the non-controlling shareholder of KMGI subsidiaries, resumed several previous civil filings in 2020, one of which challenged the increase in the Rompetrol Rafinare Constanta, the KMGI subsidiary, share capital in 2003-2005. The hearings have been held periodically, but no final decisions were made. On July 13, 2021, the court rejected the complaint of Faber. However, Faber appealed against this decision. As a result of hearing in December 2021 the court admitted the appeal and sent back the file to be re-settled. Next hearings are scheduled to March and May 2022.

The Group believes that its position with regard to the new Faber filing will be sustained similar to the matters resolved in 2020 in favour of the Group, and as such, the Group did not recognize any provisions as of December 31, 2021.

Cost recovery audits

Under the base principles of the production sharing agreements, the Government transferred to contractors the exclusive rights to conduct activities in the subsurface use area, but did not transfer rights to this subsurface use area either to ownership or lease. Thus, all extracted and processed oil (i.e. the hydrocarbons produced) are the property of the Government. Works are carried out on the basis of compensation and the Government pays to the contractors not in cash but in the form of the portion of oil production, thereby allowing the contractors to recover their costs and earn profit.

In accordance with the production sharing agreements, not all costs incurred by the contractors could be reimbursed. Certain expenditures need to be approved by the authorized bodies. The authorized bodies conduct the cost recovery audits. In accordance with the cost recovery audits completed prior to December 31, 2021, certain amounts of the costs incurred by contractors were assessed as non-recoverable. The parties to the production sharing agreements are in negotiations with respect to the recoverability of those costs.

As of December 31, 2021, the Group's share in the total disputed amounts of costs is 1,177 million US dollars (equivalent to 508,180 million tenge as at reporting date) (2020: 1,078 million US dollars, equivalent to 453,641 million tenge as at reporting date), including its share in the joint venture. The Group and its partners under the production sharing agreements are in negotiation with the Government with respect to the recoverability of these costs.

Kazakhstan local market obligation

The Government requires oil companies in the RK to supply a portion of the products to meet the Kazakhstan domestic energy requirement on an annual basis, mainly to maintain oil products supply balance on the local market and to support agricultural producers during the spring and autumn sowing and harvest campaigns.

Kazakhstan local market oil prices are significantly lower than export prices and even lower than the normal domestic market prices determined in an arm-length transaction. If the Government does require additional crude oil to be delivered over and above the quantities currently supplied by the Group, such supplies will take precedence over market sales and will generate substantially less revenue than crude oil sold on the export market, which may materially and adversely affect the Group's business, prospects, consolidated financial position and performance.

In 2021, in accordance with its obligations, the Group delivered 7,114 thousand tons of crude oil (2020: 6,401 thousand tons), including its share in the joint ventures and associates, to the Kazakhstan market.

Commitments under subsoil use contracts

As at December 31, 2021, the Group had the following commitments related to minimal working program in accordance with terms of licenses, production sharing agreements and subsoil use contracts, signed with the Government, including its share in joint ventures and associate:

In millions of tenge	Capital expenditures	Operational expenditures
Year		
2022	236,077	57,135
2023	94,245	4,373
2024	27,106	4,383
2025	10,880	4,314
2026-2048	5,216	21,372
Total	**373,524**	**91,577**

Oil supply commitments

As of December 31, 2021, Kashagan, joint venture of the Company, had commitments under the oil supply agreements in the total amount of 4.3 million ton (December 31, 2020: 8.2 million ton).

Other contractual commitments

As at December 31, 2021, the Group, including its share in joint ventures commitments, had other capital commitments of approximately 148,590 million tenge (as at December 31, 2020: 196,531 million tenge), related to acquisition and construction of long-lived assets.

As at December 31, 2021, the Group had commitments in the total amount of 184,455 million tenge (as at December 31, 2020: 232,136 million tenge) under the investment programs approved by the joint order of Ministry of Energy of RK and Committee on Regulation of Natural Monopolies and Protection of Competition of the Ministry of National Economy of RK to facilitate production units.

Non-financial guarantees

As of December 31, 2021 and 2020, the Group has outstanding performance guarantees issued in favour of third parties whereas it provides guarantee should its joint venture or associate fail to perform their obligations under the natural gas purchase-sale, transportation and other agreements.

As of December 31, 2021, the management of the Group believes that there were no expected cases of non-performance from the guaranteed parties and, accordingly, no obligations related to the above stated non-financial contingencies were recognized.

33. SEGMENT REPORTING

The Group's operating segments have their own structure and management according to the type of the produced goods and services provided. Moreover, all segments are strategic directions of the business which offer different types of the goods and services in different markets. The functions have been defined as the operating segments of the Group because they are segments a) that engages in business activities from which revenues are generated and expenses incurred; b) whose operating results are regularly reviewed by the Group's chief operating decision makers to make decisions.

The Group's activity consists of three main operating segments: exploration and production of oil and gas, oil transportation, and refining and trading of crude oil and refined products. The Group presents the Company's activities separately in Corporate segment, since the Company performs not only the functions of the parent company, but also carries out operational activities. The remaining operating segments have been aggregated and presented as other operating segment due to their insignificance.

Disaggregation of revenue by types of goods and services is presented in Note 6 to the consolidated financial statements.

In 2021 disaggregated revenue type Sales of crude oil and gas and Sales of refined products mainly represents sales made to the external parties by the following operating segments:

In millions of tenge				Type of products and services
		2021		2020
	Sales of crude oil and gas	Sales of refined products	Sales of crude oil and gas	Sales of refined products
Segments				
Refining and trading of crude oil and refined products	**3,097,249**	**1,527,802**	1,676,749	989,881
Corporate	**–**	**559,515**	–	333,100
Exploration and production of oil and gas	**–**	**3,092**	–	3,910
Other	**–**	**11,704**	–	9,832
	3,097,249	**2,102,113**	1,676,749	1,336,723

Segment performance is evaluated based on revenues, net profit and adjusted EBITDA, which are measure on the same basis as in the consolidated financial statements.

EBITDA is a supplemental non-IFRS financial measure used by management to evaluate segments performance, and is defined as earnings before depreciation, depletion and amortization, impairment of property, plant and equipment, exploration and evaluation assets, intangible assets and assets classified as held for sale, exploration expenses, impairments of joint ventures and associates, finance income and expense, income tax expenses.

EBITDA, % is calculated as EBITDA of each reporting segment divided by the total EBITDA.

Eliminations and adjustments represent the exclusion of intra-group turnovers. Inter-segment transactions were made on terms agreed to between the segments that may not necessarily comply with market rates, except for certain regulated services, which are provided based on the tariffs available to related and third parties.

Geographic information

The Group's property, plant and equipment (Note 15) are located in the following countries:

In millions of tenge	2021	2020
Kazakhstan	**2,782,481**	3,730,070
Other countries	**623,499**	639,675
	3,405,980	4,369,745

The following represents information about profit and loss for 2021 and assets and liabilities as at December 31, 2021 of operating segments of the Group:

In millions of tenge	Exploration and production of oil and gas	Oil transportation	Refining and trading of crude oil and refined products	Corporate	Other	Eliminations and adjustments	Total
Revenues from sales to external customers	8,142	203,388	4,944,326	560,895	122,042	–	5,838,793
Revenues from sales to other segments	1,223,371	78,579	157,380	46,222	86,598	(1,592,150)	–
Total revenue	**1,231,513**	**281,967**	**5,101,706**	**607,117**	**208,640**	**(1,592,150)**	**5,838,793**
Cost of purchased oil, gas, petroleum products and other materials	(30,151)	(14,477)	(4,508,909)	(265,594)	(33,494)	1,256,134	(3,596,491)
Production expenses	(309,158)	(124,163)	(203,059)	(167,570)	(149,841)	260,760	(693,031)
Taxes other than income tax	(346,304)	(14,105)	(14,998)	(45,855)	(7,377)	–	(428,639)
Transportation and selling expenses	(103,433)	(5,444)	(66,646)	(10,353)	–	53,964	(131,912)
General and administrative expenses	(26,223)	(18,312)	(36,366)	(46,296)	(24,151)	2,870	(148,478)
Share in profit of joint ventures and associates, net	625,567	105,890	17,694	–	19,582	–	768,733
EBITDA	**1,041,811**	**211,356**	**289,422**	**71,449**	**13,359**	**(18,422)**	**1,608,975**
EBITDA, %	**65 %**	**13 %**	**18 %**	**4 %**	**1 %**	**(1 %)**	
Depreciation, depletion and amortization	(126,433)	(41,694)	(140,870)	(3,034)	(10,037)	–	(322,068)
Finance income	71,785	3,980	2,563	161,385	20,795	(175,909)	84,599
Finance costs	(19,566)	(6,426)	(93,290)	(212,693)	(4,919)	87,629	(249,265)
Impairment of property, plant and equipment, exploration and evaluation assets, intangible assets and assets classified as held for sale	(3,987)	(4,796)	(8,217)	(324)	(3,400)	–	(20,724)
Exploration expenses	(79,083)	–	–	–	–	–	(79,083)
Income tax expenses	(136,784)	(14,441)	(38,159)	(30,899)	(1,110)	–	(221,393)
Profit/(loss) for the year from continuing operations	**593,531**	**48,688**	**36,922**	**300,334**	**(33,052)**	**(101,561)**	**844,862**

In millions of tenge	Exploration and production of oil and gas	Oil transportation	Refining and trading of crude oil and refined products	Corporate	Other	Eliminations and adjustments	Total
Other segment information							
Investments in joint ventures and associates	5,904,568	523,747	47,395	–	74,674	–	6,550,384
Capital expenditures	168,017	92,061	83,020	6,013	12,681	52,398	414,190
Allowances for obsolete inventories, expected credit losses on trade receivables, loans and receivables from related parties, other current financial assets and impairment of other current non-financial assets	(4,854)	(9,686)	(40,898)	(28,518)	(9,023)	–	(92,979)
Assets of the segment	**8,624,757**	**1,213,613**	**3,000,106**	**1,580,623**	**322,008**	**(1,088,846)**	**13,652,261**
Liabilities of the segment	**868,902**	**216,809**	**1,994,289**	**3,378,313**	**100,458**	**(1,065,191)**	**5,493,580**

The following represents information about profit and loss for 2020 and assets and liabilities as at December 31, 2020 of operating segments of the Group:

In millions of tenge	Exploration and production of oil and gas	Oil transportation	Refining and trading of crude oil and refined products	Corporate	Other	Eliminations and adjustments	Total
Revenues from sales to external customers[1]	8,981	216,843	2,955,444	334,092	109,604	–	3,624,964
Revenues from sales to other segments[1]	868,731	91,497	327,229	36,945	83,314	(1,407,716)	–
Total revenue[1]	**877,712**	**308,340**	**3,282,673**	**371,037**	**192,918**	**(1,407,716)**	**3,624,964**
Cost of purchased oil, gas, petroleum products and other materials[1]	(29,528)	(13,301)	(2,739,382)	(185,884)	(32,844)	1,099,703	(1,901,236)
Production expenses[1]	(297,934)	(124,041)	(202,820)	(126,431)	(139,308)	234,356	(656,178)
Taxes other than income tax[1]	(194,328)	(12,891)	(15,188)	(24,994)	(7,107)	186	(254,322)
Transportation and selling expenses[1]	(118,054)	(8,019)	(62,381)	(7,752)	–	59,062	(137,144)
General and administrative expenses[1]	(30,219)	(16,775)	(46,690)	(51,053)	(25,096)	23,208	(146,625)
Share in profit of joint ventures and associates, net[1]	182,572	93,525	(1,373)	–	6,091	–	280,815
EBITDA[1]	**390,221**	**226,838**	**214,839**	**(25,077)**	**(5,346)**	**8,799**	**810,274**
EBITDA, %[1]	**48 %**	**28 %**	**27 %**	**(3 %)**	**(1 %)**	**1 %**	
Depreciation, depletion and amortization[1]	(118,157)	(39,253)	(146,764)	(3,200)	(10,053)	–	(317,427)

[1] Certain numbers shown here do not correspond to the consolidated financial statements for the year ended December 31, 2020 and reflect adjustments made, refer to Note 5.

In millions of tenge	Exploration and production of oil and gas	Oil transportation	Refining and trading of crude oil and refined products	Corporate	Other	Eliminations and adjustments	Total
Finance income[1]	106,079	3,943	18,285	99,245	11,760	(151,325)	87,987
Finance costs[1]	(16,934)	(5,180)	(87,043)	(269,715)	(11,694)	125,194	(265,372)
Impairment of property, plant and equipment, exploration and evaluation assets, intangible assets and assets classified as held for sale[1]	(61,908)	(10,534)	(164,736)	(2,279)	(4,436)	–	(243,893)
Exploration expenses	(19,807)	–	–	–	–	–	(19,807)
Impairment of investments in joint venture and associate	(30,654)	–	–	–	–	–	(30,654)
Income tax expenses[1]	(60,988)	(18,462)	4,028	(8,306)	(1,548)	–	(85,276)
Profit/(loss) for the year from continuing operations[1]	**171,149**	**161,288**	**(227,818)**	**(189,273)**	**(18,589)**	**13,812**	**(89,431)**
Other segment information							
Investments in joint ventures and associates	5,371,371	515,025	34,122	–	101,579	448,924	6,471,021
Capital expenditures	167,609	48,900	84,649	11,811	15,586	125,608	454,163
Allowances for obsolete inventories, expected credit losses on trade receivables, loans and receivables from related parties, other current financial assets and impairment of other current non-financial assets	(4,495)	(6,457)	(46,112)	(25,141)	(9,254)	(7,240)	(98,699)
Assets of the segment	**7,861,383**	**1,189,807**	**2,654,458**	**1,302,283**	**340,220**	**1,305,136**	**14,653,287**
Liabilities of the segment	**814,551**	**198,810**	**1,704,835**	**3,269,893**	**105,549**	**(77,030)**	**6,016,608**

34. SUBSEQUENT EVENTS

Dividends received

In January 2022, the Company received dividends from KOA, KGM and MIBV, the joint ventures, of 3,000 million tenge, 4,338 million tenge and 97 million US dollars (equivalent to 41,996 million tenge), respectively.

Inspections

Starting from January 2022, various state bodies have initiated inspections in some companies of the Group, including the Company. Currently, the inspections have not been completed and, accordingly, the Group is unable to assess the impact on the consolidated financial statements.

State of emergency

On January 2, 2022 protests started in Mangystau region of Kazakhstan related to significant increase in the liquified petroleum gas retail price. Further, protests began in other cities and resulted in riots, damage to property and loss of life. On January 5, 2022 the government declared a state of emergency.

As a result of the above protests and state of emergency the President of the RK has made certain public announcements regarding possible measures including amendments to the tax legislation, introducing measures for financial stability, controlling and stabilizing the inflation rate and the tenge exchange rate.

On January 19, 2022 the state of emergency was lifted. On January 25, 2022 Samruk-Kazyna presented its action plan on reforms, developed to pursue the instructions of the President of RK. The Company is currently unable to quantify what the impact, if any, may be on the financial position of any new measures the Government and Samruk-Kazyna may take or any impact from the effect on the Kazakhstan economy as a result of the above protests, state of emergency and plans of Samruk-Kazyna.

Impact of sanction risks

In February 2022, due to the conflict between the Russian Federation and Ukraine, numerous sanctions have been announced by majority of western countries against the Russian Federation. These sanctions are targeted to have a negative economic impact on the Russian Federation.

Due to the growing geopolitical tensions, since February 2022, there has been a significant increase in volatility on the securities and currency markets, as well as a significant depreciation of the tenge against the US dollar and the euro.

The Group regards these events as non-adjusting events after the reporting period, the quantitative effect of which cannot be estimated at the moment with a sufficient degree of confidence.

As at December 31, 2021, the Group had cash and cash equivalents in various currencies with total amount of equivalent to 87,183 million tenge and borrowings of 221,207 million tenge (Note 25) at subsidiaries of Russian banks. As at the date of issue of these consolidated financial statements, cash and cash equivalents held at subsidiaries of Russian banks equaled to 205 million tenge due to the transfer of funds to Kazakhstan banks. The transfer was made without any loss.

Currently, the Group's management is analyzing the possible impact of changing micro- and macroeconomic conditions on the Group's financial position and results of operations.

APPENDICES

CORPORATE GOVERNANCE CODE COMPLIANCE REPORT FOR 2021

Appendix to the 2021 Annual Report of JSC NC KazMunayGas

Report on compliance / non-compliance with the principles and provisions of the corporate governance code of JSC Samruk-Kazyna[1]

This report is developed in furtherance of item 6 of the Code, and covers information on KMG's compliance / non-compliance with the principles and provisions of the Code.

In general, at year-end 2021, KMG was in compliance with the provisions and principles of the Code, taking into account the following aspects:

1. **In line with item 2 of Chapter 1 of Section 2 of the Code** "It is recommended to provide the optimal asset structure for the Fund's Organisations. The parent company can be established in the form of a joint stock company in the Holding company. Other organisations are recommended to be established in the form of limited liability partnerships.
   In the Organisations that have been already established in the form of a joint stock company, it is recommended to consider the possibility of reorganisation in the form of a limited liability company with account of economic, legal and other aspects and interests of the Fund Group. When creating new Organisations, the preferred legal form is a limited liability partnership. Creation of new Organisations in the form of a joint stock company is allowed in exceptional cases, such as planned in the future transfer of the Organisation's shares to the Stock Exchange Market.".

These requirements of the Code were generally complied with in KMG during the reporting period. KMG takes a consistent effort to optimise its asset structure. KMG's preferred form for new legal entities is a limited liability partnership as recommended by the Code. In 2021, the Company did not create joint stock companies or reorganise existing joint stock companies into limited liability partnerships. At the same time, the work on optimisation of the structure of KMG group assets will continue in accordance with the approved plans / programmes[1].

On 9 December 2021, KMG's list of non-strategic assets to be removed from the Group (the "Non-Strategic Asset List") was amended in accordance with the Board of Directors' resolution dated 4 November 2021. Included in the Non-Strategic Asset List are 47 assets to be sold, liquidated or reorganised from 2021 to 2025.

On 9 November 2021, KMG transferred the shares of JSC KazTransGas ("KTG") to the Fund under a sale and purchase agreement for 100% of KTG's ordinary shares signed on 3 November 2021.

The number of KMG's sold / liquidated assets in 2021: sold – 20 companies, including KTG's subsidiaries and associates, and liquidated – 6 companies.

On 9 November 2021, as part of a joint project with Tatneft on rubber production, KMG acquired 25% of Butadiene LLP.

2. **In line with item 14 of Chapter 1 of Section 2 of the Code** "Boards of Directors of the Fund and Organisations ensure the implementation of these standards and their observation. All officials and employees of the Fund and the Organisations must sign a statement confirming their familiarisation with the Code of Business Ethics and regularly reaffirm their knowledge of the Code."

[1] The Corporate Governance Code (the "Code") of JSC NC KazMunayGas ("KMG") is identical to that of JSC Samruk-Kazyna (the "Fund") and approved by the Fund's resolution dated 27 May 2015 (Minutes No. 22/15).

[2] Under the privatisation and divestment programmes, KMG Group is reducing the number of its legal entities. On 29 December 2020, the Government of the Republic of Kazakhstan approved a Comprehensive Privatisation Plan for 2021–2025 covering 51 KMG Group companies, including 22 within the IPO perimeter (Decree No. 908).

These requirements of the Code were generally complied with at KMG as of 31 December 2021. KMG conducts its business in a fair, honest and transparent manner while also paying special attention to the observance of these principles by our colleagues and partners. To this effect, KMG approved the Code of Business Ethics, Anti-Corruption Policy, Conflict of Interest Policy for Employees and Officials, and the Counterparty Due Diligence Policy.

Every year, the Company conducts training for new hires and existing employees as regards compliance with ethical standards, commitments and conduct of employees. In 2021, our employees attended online compliance training that covered applicable legislation, key corporate compliance policies, and international cases of compliance violation. On top of that, employees provide a written statement of their commitment to observe the Code of Business Ethics and the Anti-Corruption Policy. At the same time, the Company takes a consistent effort to collect written acknowledgements from all its employees that they have read and understood the Code of Business Ethics.

3. **In line with item 5 of Chapter 3 of Section 2 of the Code** "Sustainable development should be integrated in:

- management system;
- development strategy;
- key processes, including risk management, planning (long-term (strategy), medium-term (5-year development plan) and short-term (annual budget) periods), accountability, risk management, HR management, investments, operational activities and other as well as in the decision-making process at all levels – from bodies (General Meeting of Shareholders (the Sole Shareholder), Board of Directors, Executive Body), to ordinary employees."

This requirement of the Code was generally complied with in KMG during the reporting period. By the resolution of KMG's Board of Directors the Sustainability Management System Guidelines were approved in 2020, which includes a description of the organisation of the stakeholder engagement process, integration of sustainability principles into key processes and monitoring, annual reporting on sustainable development, implementation of priority areas (initiatives) in the field of sustainable development, development and maintenance of a culture of sustainable development, risk identification and assessment, documentation management, measuring performance in the area of sustainable development. At the same time, the work on the integration of sustainable development into key processes will continue.

4. **In line with item 2 of Chapter 4 of Section 2 of the Code** "The Organisation must develop the Regulations of the General Meeting of the Shareholders (Participants), which should define the procedure of the General Meetings of the Shareholders (Participants), providing for adequate discussion of the agenda items and decision-making, speech of officials, etc."

As KMG is a 100% state-owned company, the Management Board and/or the Chairman of the Fund's Management Board currently act as the General Meeting of the Shareholders[3]. That said, there are no such regulations at the moment, but the Company is developing regulations on the general meeting of shareholders as part of its IPO process and applicable listing requirements.

5. **In line with item 6 of Chapter 5 of Section 2 of the Code** "In companies in which 100% of shares are owned by the Fund, the following search and election process of a member of the Board of Directors exists:

- the Fund, together with the Chairman of the Board of Directors, the Chairman of the Nomination and Remuneration Committee performs preparation and planning: analysis and definition of a set of the required competencies and skills in the Board of Directors, taking into account the tasks of the Organisation;
- specifies the search channel of the candidates on their own or with the assistance of the recruiting organisation;
- searches for candidates;
- selects the candidate: assessment, interview and preparing the proposals for candidates (candidates for the Board of Directors of the Company are discussed with at least one member of the Nomination and Remuneration Committee of the Board of Directors of the Fund);
- the decision of the Sole Shareholder;
- publishing information on the Internet resource of the Organisation press release.

Holding companies can use this process in the Group."

[3] In accordance with: Paragraph 5 of Article 35 of the Law of the Republic of Kazakhstan On Joint Stock Companies dated 13 May 2003; Paragraph 2.3 of Article 10 of the Law of the Republic of Kazakhstan On the Sovereign Wealth Fund dated 1 February 2012; List of the Company's or other legal entity's business matters included by Kazakhstan's laws and/or KMG's Charter in the remit of the General Meetings of the Shareholders (Participants) or any other supreme governing body of the Company or any other legal entity in which the Fund is a shareholder or a participant or has the right for a property share, which are subject to resolution of the Management Board or the Chairman of the Fund's Management Board (the list is approved by the resolution of the Fund's Management Board dated 1 June 2009, Minutes No. 59/09).

This requirement of the Code was generally complied with in KMG during the reporting period. KMG Group companies have put in place a similar document regulating the search and selection of candidates for the Board of Directors at KMG's subsidiaries and associates, with no involvement of the Nomination and Remuneration Committee of KMG's Board of Directors required. This is due to adopting KMG's new 2022–2031 Development Strategy, which provides for managing the assets through a holding company model.

6. **In line with item 6 of Chapter 5 of Section 2 of the Code** "The Fund and organisations must have succession plans of appointments to the Board of Directors in order to maintain business continuity and progressive renewal of the Board of Directors."

This requirement of the Code in KMG in the reporting period was generally complied with. The KMG's Board of Directors Succession Policy and the KMG's Board of Directors Succession Plan for the period of 2021-2024 were approved by the resolution of the KMG Board of Directors dated 8 April 2021, Minutes No.5/2021. At the same time, the KMG's Board of Directors Succession Plan for the period of 2021-2024 does not provide for a list of candidates to fill vacancies in the KMG Board of Directors. On 6 April 2022, the KMG Board of Directors approved the amendments and additions to the abovementioned Board of Directors Succession Plan of KMG for the period of 2021-2024 (Minutes №6/2022). Those amendments and additions are related, among other things, to including the information about a candidate to the position of an Independent Director of the KMG's Board of Directors in the KMG's Board of Directors Succession Plan. It is planned to update the KMG's Board of Directors Succession Plan through supplementing the list of candidates to the KMG Board of Directors in 2022.

7. **In line with item 7 of Chapter 5 of Section 2 of the Code** "The Board of Directors approves the induction programme for newly elected members of the Board of Directors and a professional development programme for each member of the Board of Directors."

This requirement of the Code was generally complied with in KMG during the reporting period. An induction programme is in place for the newly elected members of the Board of Directors, which also approved the 2021 training plan on 8 April 2021 (Minutes No. 5/2021). The professional development programme is expected to be approved in 2022 based on self-evaluation of the Board of Directors' performance for 2021.

8. **In line with item 10 of Chapter 5 of Section 2 of the Code** "The establishment of the remuneration for a member of the Board of Directors should be made in accordance with the methodology developed by the Fund. Additionally, the expected positive effect to the Organisation of participation in the Board of Directors of particular member should be taken into account."

This requirement of the Code was generally complied with in KMG during the reporting period, as the Fund established remuneration for members of the Board of Directors in accordance with its approved methodology.

9. **In line with item 12 of Chapter 5 of Section 2 of the Code** "The recommended frequency of meetings of the Board of Directors is 8–12 meetings per year."

This requirement of the Code was generally complied with in KMG during the reporting period, with 11 regular meetings scheduled and held in 2021. The Board of Directors also had 8 extraordinary meetings.

10. **In line with item 15 of Chapter 5 of Section 2 of the Code** "With respect to the Corporate Secretary, the Organisation develops a programme of induction and succession planning."

This requirement of the Code was not complied with in KMG during the reporting period. The Corporate Secretary Service focused on the Company's priority tasks as part of corporate governance improvement, and some direct activities of the unit were postponed due to insufficient resources amid the COVID-19 pandemic. Activities on development of an induction and succession planning programme in relation to the Corporate Secretary are included in the Corporate Secretary Service's work plan for 2022.

11. **In line with item 3 of Chapter 6 of Section 2 of the Code** "The chief supervising the function of risk management and internal control is recommended not to be a risk owner, which provides for his independence and objectiveness. Combination of the functions on risk management and internal control with the functions associated with economic planning, corporate finance, treasury, taking investment decisions is prohibited. Combination with other functions is permissible, if there is no material conflict of interest."

This requirement of the Code was generally complied with in KMG during the reporting period. In line with KMG's current organisational structure, the Risk Management and Internal Control Service (the "RMICS") reports directly to the Deputy Chairman of the Management Board for Strategy, Investment and Business Development. The RMICS Head does not own any risk, which means there is no conflict of interest. Moreover, the RMICS Head is an independent participant of the Executive Body's Committees and has full voting right as a representative of the risk management unit.

12. **In line with item 6 of Chapter 7 of Section 2 of the Code** "The internet resource shall contain the following minimum information:

- information on interested-party transactions, including parties thereto, material terms (subject and price), and the body which approved the transaction;
- information on major transactions, including parties thereto, material terms (subject and price), and the body which approved the transaction."

This requirement of the Code was generally complied with in KMG during the reporting period. In 2021, KMG included the Major and Interested-Party Transactions section in its Annual Report published on the corporate internet resource.

MAJOR AND INTERESTED-PARTY TRANSACTIONS

Major transactions

In the reporting period, no transactions recognised as major transactions under the Law of the Republic of Kazakhstan On Joint Stock Companies and KMG's internal documents were made by the Board of Directors or the General Shareholders' Meeting[1].

Interested-party transactions

In the third quarter of the reporting period, KMG's Board of Directors approved one transaction recognised as an interested party transaction under the Law of the Republic of Kazakhstan On Joint Stock Companies and associated with the acquisition or disposal of property, the value of which is 10% or higher of the total book value of KMG's assets, namely disposal of 100% of ordinary shares in JSC KazTransGas (JSC NC QazaqGaz) through a Sale and Purchase Agreement between JSC NC KazMunayGas and JSC Samruk-Kazyna. On 9 November 2021, all ordinary shares of JSC NC QazaqGaz were transferred to JSC Samruk-Kazyna. The disposed asset amounts to 13% of the total book value of KMG's assets.

[1] In accordance with the Law On Joint-Stock Companies of the Republic of Kazakhstan, a major transaction is a transaction or a series of interrelated transactions resulting in the (potential) acquisition or disposal of property by a company, the value of which amounts to twenty-five percent or more of the total book value of such company's assets.

GLOSSARY

1P reserves – Proved reserves

2P reserves – Proved plus Probable reserves

3P reserves – Proved plus Probable plus Possible reserves

4ICP – Fourth Injection Compressor Project

5TL – 5th Trunkline

A&M – Agriculture & Mechanical

AC- Audit Committee

AG – Amangeldy Gas LLP

AGP – Asia Gas Pipeline

AIFC – Astana International Financial Centre

APG – Associated petroleum gas

APC – The Automated Process Control

BSc – Bachelor of Science

BCMS – business continuity management system

BATNEEC – Best Available Techniques not

Entailing Excessive Costs

BTUs – quadrillion

BP – British Petroleum

bln – billion

bcf – billion cubic feet

bln m^3 – billion cubic meters

BGR-TBA – Bukhara gas-bearing region – Tashkent-BishkekAlmaty

BSGP – Beineu-Shymkent Gas Pipeline

BTUs – quadrillion

Code – KMG Corporate Governance Code

CFO – Chief Financial Officer

CDP – Carbon Disclosure Project

CPC – Caspian Pipeline Consortium

CFO – Cash flow from operating activities

CJSC – Closed joint-stock company

CNODC – China National Oil and Gas Exploration and Development Company

CFO – Chief Financial Officer

CNG – compressed natural gas

CNPC – China National Petroleum Corporation

CRMS – the corporate risk management system

CFA – Chartered Financial Analyst

Code – KMG Corporate Governance Code

COVINA – Companhia Vidreira Nacional

CDP – Carbon Disclosure Project

CNG – Compressed natural gas

Capex – Capital expenditures

CITIC – China International Trust and Investment Corporation

DBK – Development Bank of Kazakhstan

DTP – Digital Transformation Program

D&O – Directors and Officers

EP – Exploration & Production

ENPF – JSC Unified Accumulative Pension Fund

ESG – Environmental, social and corporate governance

ECB – European Central Bank

EIA – Environmental Impact Assessment Exporting Countries

EBITDA – Earnings before interest, taxes, depreciation and amortization

EIA – Electronic Industries Alliance

ESG – Environmental Social Governance

EDP – Electricidade de Portugal

E&E – exloration and evaluation

EY – Ernst & Young

FCF – Free cash flow

FDI – Foreign direct investment

FAR – Fatality Accident Rate

FGP – the Future Growth Project

FPSA – the Final Production Sharing Agreement

FC – Finance Committee

GJ – gigajoule

Gcal – gigacalorie

GHG – Greenhouse gas

GPS – Global Positioning System

GGFR – Global Gas Flaring Reduction Partnership

GRI – Global Reporting Initiative

GDP – Gross Domestic Product

GRI – Global Reporting Initiative's

G&A – General and administrative

GTU – Gas Treatment Unit

GHG – Greenhouse Gas

HDPE – high-density polyethylene

HSE – Health, safety and environment

HSE & SD Com – Health, Safety, Environment and Sustainable

Development Committee

ICA – Intergas Central Asia

IPO – Initial public offering

IMF – International Monetary Fund

IT – Information Technology

IOGP – International Association of Oil & Gas Producers

ISO – International Organization for Standardization

IPIECA – International Petroleum Industry Environmental Conservation Association

IFRS – International Financial Reporting Standards

ICS – internal control system

IAS – Internal Audit Service

INED – Independent Non-Executive Director

JSC – Joint stock company

JV – Joint venture

JM – Jerónimo Martins

KMG – Joint stock company National company KazMunaiGas

KTO – KazTransOil

KCP – Kazakhstan-China Pipeline

KMG EP – KazMunaiGas Exploration Production

KMGI – Kazmunaigas International

KPI – Key performance indicator

KMTF – Kazmortransflot

KZT – Kazakhstan tenge

KTG – KazTransGas

KTGA – KazTransGas Aimak

kWh – Kilowatt-hour

KPI – Key Performance Indicators

KTL – Complex Technology Lines

KRI – key risk indicator

KASE- Kazakhstan Stock Exchange JSC

KGDBN – KPC Gas Debottlenecking Project

LNG – liquefied natural gas

LDPE – low-density polyethylene

LPG – Liquefied petroleum gas

LLP – limited liability Partnership

LTIR – Lost Time Incident Rate

LLB – Bachelor of laws

MMboe – million barrels of oil equivalent

mln – million

MBA – Master in Business Administration MMtoe= million tonnes

of oil equivalent

MIT – Massachusetts Institute of Technology

thous. – thousand

MS – Management system

MRM – Maintenance and repair management

MVP – The Minimum Viable Product

MT – MunaiTas

MNC – Offshore Oil Company

M&A – Mergers and Acquisitions

mln tonnes – million tonnes

NBK – the National Bank of Kazakhstan

NC – National company

NCOT – National oil transportation company

NED – Non-Executive Director

NCS PSA – The North Caspian Sea Production Sharing Agreement

NMC – National Mining Company

NOGC – National Oil and Gas Company

NMSC – National Maritime Shipping Company

NYSE – New York Stock Exchange

NRC – Nomination and Remuneration Committee

NCOC – North Caspian Operating Company

OHSAS – Occupational Health and Safety Assessment Series

OECD – Organisation for Economic Co-operation and Development

OPEC – The Organization of the Petroleum

OGPP – Orenburg Gas Processing Plant

OJSC – Open joint stock company

plc- Public limited company

PRMS – Petroleum Resources Management System

PJSC – Public joint-stock company

PKOP – PetroKazakhstan Oil Products LLP

PSA – Production Sharing Agreement

ROACE – Return on Avarage Capital Employed

R&D – Research and Development

SJSC – State joint stock company

SPE – Society of Petroleum Engineers

SSI – Social Stability Index

SACP – stand-alone credit profile

Samruk-Kazyna JSC, the Fund – Sovereign Wealth, Fund Samruk-Kazyna Joint-Stock Company

SDG – Sustainable Development Goals

SEP – Stanford Executive Program

S&P – Standard & Poor's

SACP – Stand-alone credit profile

SPMC – Strategy and Portfolio Management Committee

TCO – Tengizchevroil

UN – United Nations

UNGC – UN Global Compact

UGS – underground gas storage

USD – United States dollar

UK – United Kingdom

WWF – World Wide Fund for Nature

WPMP – the Wellhead Pressure Management Project

WEC – World Energy Council

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